

Consumer Markets for Pesticides and Fertilizers:

U.S. Market Analysis and Opportunities

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Consumer Markets for Pesticides and Fertilizers: U.S. Market Analysis and Opportunities

*This report and the survey on which it is based are the work effort
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© CONSUMER MARKETS FOR PESTICIDES AND FERTILIZERS: U.S. MARKET ANALYSIS AND OPPORTUNITIES

FOREWORD

Consumer Markets for Pesticides and Fertilizers: U.S. Market Analysis and Opportunities is the eighteenth edition of Kline's comprehensive survey of this industry. This service provides biennial business information on this highly competitive and changing industry. It presents data on the U.S. consumer market for pesticides, fertilizers, and related products in two volumes. *Section One: Business Analysis* provides information on market size, brand shares, advertising expenditures, distribution patterns, and forecasts for each of 11 product categories and profiles of roughly 40 major suppliers and leading distributors in the industry.

Section Two: Consumer/Retailer Profiles presents data on the buying and selling practices for 11 product categories based on 1,498 consumer interviews. It includes tabulated results of all responses to these structured surveys.

Your comments and suggestions for further improvements are welcomed and encouraged. As a convenience, we have provided a comment sheet in Appendix 7 that we hope you will return to us so that we may incorporate any improvements you might suggest into future editions. We also invite all subscribers to notify us of any errors so that we may correct them in future editions of this survey. If we may be of any assistance in using this document or provide further insights into our methodology or findings, our staff would be pleased to help.

For more focused analyses, Kline & Company can also provide assistance through our custom, strategic consulting capabilities. Having served the agribusiness and related industries since the 1960s, Kline has undertaken numerous consulting assignments that have involved growth forecasts, competitive intelligence, market and brand analyses, and consumer products market research. In addition to these analyses, Kline has completed various other engagements for our industry-leading clients, including:

- Acquisition screening and assessments
- New business development
- Industry/category/brand assessments
- Competitive intelligence
- Strategic analyses

We invite all subscribers to notify us of any errors so that we may correct them in future editions of this study.

In closing, we wish to acknowledge the efforts of the many Kline team members for their work in completing this report.

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1. INTRODUCTION

Section 2 of *Consumer Markets for Pesticides and Fertilizers: U.S. Market Analysis and Opportunities* summarizes the results of 1,500 consumer interviews conducted online. The consumer interviews were conducted by Ipsos Insight LLC, Westbury, NY.

A listing of the states that are included in each of the geographic regions is provided in Appendix 5.

A comment sheet is provided in Appendix 7. Any opinions or comments concerning this study are welcome.

All the appendices mentioned above appear at the end of this study.

PURPOSE

The primary purpose of conducting this research is to monitor activity within the consumer pesticide and fertilizer markets. Based on the data provided in this study, subscribers will have an independently gathered “snapshot” of end user activities and opinions concerning the purchase of various pesticides, fertilizers, and related products.

SCOPE

This report covers pesticides and fertilizers used by consumers on lawns, gardens, and houseplants, and in households.

The consumer findings for this study are based on responses from a balanced sample of a designated consumer panel. Although data concerning U.S. consumers’ usage of and attitudes toward products covered in this study are provided, it is not the intent of this study to present statistically significant findings concerning the entire U.S. market. Therefore, caution is advised in projecting the findings from this study to the U.S. consumer population.

ORGANIZATION

This volume is grouped into five major sections. The first section, a brief overview of consumer findings, offers highlights from the consumer survey data and outlines the general structure that is followed throughout in presenting detailed results from the surveys. The next four sections discuss the four major product categories: fertilizers, herbicides, insecticides, and other products. The other products section includes rodenticides, fungicides, and insect repellents.

DATA PRESENTATION

The data provided in this volume is organized into tables that summarize consumer responses to the questions shown in the questionnaire. Each section is divided into a written summary and tables, with the summary appearing ahead of the tables within each section. It is suggested that subscribers refer to the questionnaire to determine the specific wording of the questions before analyzing the results presented in the tables.

All data in the tables are broken down by several demographic factors and summarized as total responses to the questions. Because multiple answers are often given to questions such as “main reason for buying brand,” the responses on some demographic breakdowns add to more than the total shown. When only single responses are given, the total sum percentage may vary slightly due to rounding.

The results of the consumer interviews are broken down by four demographic factors: geographic regions, dwelling, population density, and family income, as shown in Figure 1-1.

Figure 1-1: Example of Column Headings in Survey Tables

Geographic regions					Dwelling				Population density			Family income				
Total	North-east	Mid-west	South	West	One-family house	Two-family house	Three+ family house	Mobile home/ trailer	Urban SMSA	Suburban SMSA	Rural county	Under \$25k	\$25k to <\$50k	\$50k to<\$75k	\$75k to<\$100k	\$100K or more

PRODUCT CATEGORIES

For each product category, the following information from the consumer interviews is presented:

- Consumer purchases. This category breaks down the number of respondents who purchased at least one unit of the product within the past 12 months. Also included as part of this category are those respondents who were unable to identify when the product was last purchased but were able to recall specific product information. A summary of the demographic characteristics of those who purchased products is also provided.
- Brand recollection. This category summarizes respondents' identification of the brand of each product last purchased.
- Product form. Where applicable, a brief summary of the product form purchased is included.
- Product usage. This category provides a listing of the different types of applications for the product.
- Retail outlets. A summary of the type of retail outlet where the product was last purchased is supplied.
- Other data. Where applicable, brief summaries are included of the most recently purchased product types, types of plants on which the products were used, problem pests, problem weeds, package sizes, and lawn care service usage.

ACCURACY

The accuracy of the data in the consumer interviews varies with the number of responses. In general, the higher the number of respondents buying a product, the greater the reliability of the information.

Table 1-1: Number of Households Interviewed that Purchased Specific Consumer Pesticides and Fertilizers Within the Previous Year by Product Category, 2016

Product category	Respondents-a
Lawn fertilizers	1,015
Pet insecticides-b	934
Lawn herbicides	891
Insect repellents	889
Garden fertilizers	870
Household insecticides	721
Houseplant fertilizers	689
Garden and nonselective herbicides	687
Lawn and garden insecticides	600
Rodenticides	516
Houseplant insecticides	424
Outdoor nonplant insecticides	451
Fungicides	323
a- Calculation method: Each number is the sum of (1) the number of respondents buying less than six months ago + (2) the number buying six months to one year ago.	
b- Includes both dogs and cats.	
Responses are based on interviews with 1,500 households.	

Not all households are potential consumers of the products covered in this survey. Only those maintaining lawns are potential purchasers of lawn maintenance products, and only households maintaining houseplants are potential consumers of houseplant maintenance products. This inevitably affects the base figure (the total number of respondents analyzed) for each product category. The base number used for purposes of analysis within the product categories is defined as those respondents who purchased the product within the past 12 months or who failed to identify the time period within which they purchased the product, but were able to provide specific information relating to the product. Within each product category, the same base figure is used throughout to provide the most accurate frame of reference and consistent interpretation of the data.

2. CONSUMER OVERVIEW

It is estimated that more than three-fourths of the households in the United States engage in some type of lawn, gardening, and/or plant maintenance activity. The level of care given through such activity depends on several factors and can range from merely watering the lawn or planting to following a strict schedule of treatment with fertilizers and pesticides.

LAWN AND GARDEN MAINTENANCE

About 82% of the respondents to a survey by Kline & Company use fertilizers on at least one area of their vegetation, with lawns ranking the highest at 72% and flowers ranking second at 29%. Vegetables, trees, shrubs, and roses are all fertilized by 19% to 21% of those answering the survey.

Fertilizing, spraying for weeds, and treating for insects are most likely done once or twice per year.

Table 2-1: Number of Times Respondents Used Lawn Fertilizers, Plant/Shrub Fertilizers, Sprayed Weeds, Treated for Household Insects, and Sprayed Outdoor Insects in 2016

Frequency	% Of respondents				
	Lawn fertilization	Plant/shrub fertilization	Spraying for weeds	Treating for household insects	Outdoor insect spraying
Once per year	27.0	25.0	15.0	15.0	15.0
Twice per year	29.0	27.0	23.0	19.0	19.0
Three times per year	10.0	11.0	17.0	12.0	11.0
Four times per year	11.0	11.0	22.0	26.0	20.0
Other	3.0	3.0	5.0	10.0	9.0
Never	19.0	23.0	19.0	18.0	26.0

LAWN CARE

About 50% of the respondents indicated that the male head of the household was responsible for fertilizing the lawn, 20% indicated that the female head of the household was responsible for lawn fertilizing, while 16% said a lawn care service was responsible.

When a lawn care service was used, the lawn was serviced six times or more during the year 13% of the time, five times per year 6% of the time, four times per year 19% of the time, three times per year 15% of the time, and two times per year 24% of the time.

Respondents who use a lawn care specialist for fertilizing the lawn were asked if the vendor offered other services, such as mowing, trimming hedges and shrubs, mulching, or raking leaves. About 74% indicated that other services were offered by their vendors, while 26% said that their vendor did not offer other services.

COST OF LAWN CARE SERVICE

About 41% of respondents said that they spent between \$21.00 and \$50.00 per visit. Breaking this down further, 13% of respondents spend between \$31.00 and \$40.00 per visit, and 18% spend between \$41.00 and \$50.00 per visit. About 10% spent between \$21.00 and \$30.00 per visit, while 41% spent more than \$51.00 per visit.

FUTURE PLANS

Of those respondents currently using a lawn care service, 80% said they would use a service the next year, 18% said they were not sure of their plans, and 2% said they would not be using a lawn care service the next year.

PEST CONTROL SERVICE

All respondents to the survey were asked whether they had used an indoor pest control service in the past 12 months, and 61% said they had not. Of the 37% that used a pest control service indoors, the greatest number is in the South, with 44% of southern respondents stating they used the service.

PEST CONTROL OR LAWN CARE SERVICE FOR MOSQUITO CONTROL

All respondents to the survey were asked whether they had used a pest control service or lawn care service in the past 12 months to make mosquito control treatments, and the majority, or 81%, said they had not. Of the 19% that used a pest control or lawn care service to make mosquito control treatments, the greatest number is in the West, with 24% of the Western respondents stating they used the service. All respondents to the survey were asked whether they had considered using a pest control service or lawn care service in the past 12 months to make mosquito control treatments, and again the majority, or 73%, said they had not. When asked how likely they were to hire professional mosquito control next year, 43% said they were likely or somewhat likely. The remainder, 57%, said they were somewhat unlikely or not likely.

CONSUMER PURCHASES

Table 2-2 depicts the frequency of use for each product analyzed. The data is presented as a U.S. total and is divided by region. The number of users is the same as shown in Table 1-1. The percentages in Table 2-1 are based on the total number of analyzed respondents in the study (1,500), including the non-responses, to maintain a constant denominator in the percentage calculations. Most of the other tables in the report use a base sample that has netted out the non-responses. That could not be done in this table due to the need to maintain a constant denominator in the percentage calculations.

Due to environmental conditions, the South accounts for the majority of consumer purchases of fertilizers and pesticides in 2016, followed by the Midwest.

The types, amount, and number of fertilizers and pesticides purchased in a given year can vary greatly from household to household, depending on maintenance activity, environmental conditions, and individual considerations. Lawn fertilizers, pet insecticides, lawn herbicides, insect repellents, garden fertilizers, and household insecticides are purchased by more than 46% of the respondents in 2016. Table 2-3 compares occurrence of consumer purchases by product category in 2005, 2007, 2009, 2011, and 2016.

BRAND RECOLLECTION

Brand recollection of the fertilizers and pesticides purchased by consumers varies significantly by product category and from year to year. In 2016, pet insecticides, houseplant fertilizers, and household insecticides were the most identifiable, with 93% of the respondents able to remember what brand they last purchased in that category. Garden fertilizers also ranked high in brand recognition, with 92% remembering the brand they last purchased. Fungicides and lawn herbicides were least memorable, with 86% of the respondents able to recall what brand they bought in 2016. Table 2-4 summarizes brand recollection by product category for 2005, 2007, 2009, 2011, and 2016.

Table 2-2: Consumer Purchases of Fertilizers and Pesticides by Geographic Region, 2016

Product category	Number of users and percent of total analyzed respondents by region-a				
	Northeast	Midwest	South	West	Total
All analyzed respondents	290	357	571	281	1,500
	19.3	23.8	38.1	18.7	100.0%
Lawn fertilizers	179	250	400	186	1,015
	17.6	24.6	39.4	18.3	100.0%
Pet insecticides-b	175	226	399	134	934
	18.7	24.2	42.7	14.3	100.0%
Lawn herbicides	159	222	358	152	891
	17.8	24.9	40.2	17.1	100.0%
Insect repellents	151	214	373	151	889
	17.0	24.1	42.0	17.0	100.0%
Garden fertilizers	164	194	336	176	870
	18.8	22.3	38.6	20.2	100.0%
Household insecticides	122	161	315	123	721
	16.9	22.3	43.7	17.1	100.0%
Houseplant fertilizers	136	146	277	130	689
	19.7	21.2	40.2	18.9	100.0%
Garden/nonselective herbicides	133	174	271	109	687
	19.4	25.3	39.4	15.9	100.0%
Lawn and garden insecticides	99	136	265	100	600
	16.5	22.7	44.2	16.7	100.0%
Rodenticides	91	113	209	103	516
	17.6	21.9	40.5	20.0	100.0%
Outdoor nonplant insecticides	85	82	196	88	451
	18.8	18.2	43.5	19.5	100.0%
Houseplant insecticides	71	87	187	79	424
	16.7	20.5	44.1	18.6	100.0%
Fungicides	62	58	134	69	323
	19.2	18.0	41.5	21.4	100.0%

a- Calculation method: The method is to find the sum of (1) the number of respondents purchasing less than six months ago, plus (2) the number of respondents purchasing between six months and one year ago, divided by (3) the total number of analyzed respondents, including non-responses. Non-responses are included to maintain a constant total sample base on which to calculate percentages, since the number of non-responses changes with each question.

b- Includes both cats and dogs.

Table 2-3: Households Purchasing Consumer Pesticides and Fertilizers by Product Category, 2005 to 2016 (Selected Years)

Product category	% Of total respondents-a				
	2005	2007	2009	2011	2016
Pet insecticides	43	66	67	70	63
Lawn fertilizers	52	45	52	51	68
Insect repellents	54	47	49	49	59
Garden fertilizers	46	39	45	44	58
Lawn herbicides	41	36	46	45	59
Houseplant fertilizers	39	35	41	40	46
Household insecticides	52	47	37	40	48
Nonselective and garden herbicides	28	28	36	35	46
Lawn and garden insecticides	34	33	31	33	40
Rodenticides	25	25	23	25	34
Houseplant insecticides	17	12	18	20	28
Outdoor nonplant insecticides	21	19	15	17	30
Fungicides	13	9	12	14	21

a- Calculation method: The method is to find the sum of (1) the number of respondents purchasing less than six months ago, plus (2) the number of respondents purchasing between six months and one year ago, divided by (3) the total answering the question after netting out the non-responses.

The 2003 respondent base is 1,540 households; the 2005 base is 1,504 households; the 2007 base is 1,658 households, the 2009 respondent base is 1,583 households, the 2011 respondent base is 1,552 households, and the 2016 base is 1,500 households.

Table 2-4: Brand Recollection of Consumer Pesticides and Fertilizers by Product Category, 2005 to 2016 (Selected Years)

Product category	% Of total respondents-a,b				
	2005	2007	2009	2011	2016
Houseplant fertilizers	90	92	92	93	93
Garden fertilizers	83	88	91	89	92
Pet insecticides	98	86	91	90	93
Household insecticides	89	92	90	92	93
Insect repellents	93	94	89	89	91
Lawn fertilizers	79	82	88	85	91
Outdoor nonplant insecticides	77	88	87	85	90
Rodenticides	73	84	86	84	90
Lawn and garden insecticides	76	84	86	87	90
Nonselective and garden herbicides	78	86	85	85	90
Lawn herbicides	75	76	85	82	86
Fungicides	58	71	72	72	86
Houseplant insecticides	73	67	64	71	90
a- Percentage of respondents who purchased a product in a given category and were able to identify the brand. The number of purchasing respondents differ from category to category.					
b- The calculation method uses (1) the number of total analyzed respondents for the category less [(2) the “don’t know” and (3) the “no answer” respondents] all divided by (1) the total number of analyzed respondents for the category.					
The 2003 respondent base is 1,540 households; the 2005 base is 1,504 households; the 2007 base is 1,658 households, the 2009 respondent base is 1,583 households, the 2011 respondent base is 1,552 households, and the 2016 base is 1,500 households.					

For additional information concerning brands purchased, please refer to the specific product sections of the report.

RETAIL OUTLETS

Home improvement centers and discount or mass merchandise stores are the leading retail outlets for the purchase of fertilizers and pesticides, ranking first or second in every product category except pet insecticides where the most frequent retail outlet is veterinarians. The importance of these two types of stores in sales of these products continues to increase as consumers look for both convenience of having everything they need and value pricing as they supplant more traditional independent outlets. Lawn and garden centers are also primary outlets for consumer pesticides and fertilizers, with their level of importance varying according to the technical nature of the product category.

For additional information concerning retail outlets, please refer to the specific product sections of the report.

Table 2-5: Consumer Purchases of Fertilizers and Pesticides by Retail Outlet, 2016

Product category	Respondent base	Discount/mass-merchandise store	Lawn and garden center	Super-market/grocery	Home improvement	Hardware store	Farm supply store	Mail order catalog	Warehouse club	Veterinarian	Pet or pet supply store	Online pet supplier/Internet	Other	Don't know
Lawn fertilizers	1,015	320	104	22	426	46	33	6	15	-	-	-	20	23
	100.0%	31.5%	10.2%	2.2%	42.0%	4.5%	3.2%	0.6%	1.5%	-	-	-	2.0%	2.3%
Garden fertilizers	870	227	164	29	315	42	38	6	17	-	-	-	9	23
	100.0%	26.1%	18.8%	3.3%	36.2%	4.8%	4.4%	0.7%	1.9%	-	-	-	1.0%	2.6%
Houseplant fertilizers	689	215	100	58	220	31	22	4	13	-	-	-	8	18
	100.0%	31.2%	14.5%	8.4%	31.9%	4.5%	3.2%	0.6%	1.9%	-	-	-	1.2%	2.6%
Lawn herbicides	891	231	89	25	402	45	38	7	17	-	-	-	12	25
	100.0%	25.9%	10.0%	2.8%	45.1%	5.0%	4.3%	0.8%	1.9%	-	-	-	1.3%	2.8%
Garden herbicides	687	186	70	23	268	63	25	7	13	-	-	-	7	25
	100.0%	27.1%	10.2%	3.3%	39.0%	9.2%	3.2%	1.0%	1.9%	-	-	-	1.0%	3.2%
Fungicides	323	65	45	15	102	18	36	13	4	-	-	-	5	20
	100.0%	20.1%	13.9%	4.6%	31.6%	5.6%	11.1%	4.0%	1.2%	-	-	-	1.5%	6.2%
Lawn and garden insecticides	600	150	56	22	234	30	38	26	17	-	-	-	7	20
	100.0%	25.0%	9.3%	3.7%	39.0%	5.0%	6.3%	4.3%	2.8%	-	-	-	1.2%	3.3%
Outdoor non-plant insecticides	451	111	36	31	140	29	20	12	24	-	-	-	21	27
	100.0%	24.6%	8.0%	6.9%	31.0%	6.4%	4.4%	2.7%	5.3%	-	-	-	4.6%	6.0%
Houseplant insecticides	424	137	34	18	128	26	19	17	25	-	-	-	8	12
	100.0%	32.3%	8.0%	4.2%	30.2%	6.1%	4.5%	4.0%	5.9%	-	-	-	1.9%	2.8%
Household insecticides	721	283	34	51	211	41	21	15	20	-	-	-	20	25
	100.0%	39.2%	4.7%	7.1%	29.3%	5.7%	2.9%	2.1%	2.8%	-	-	-	2.8%	3.5%
Rodenticides	516	165	23	25	155	40	38	12	22	-	-	-	21	15
	100.0%	32.0%	4.5%	4.8%	30.0%	7.8%	7.4%	2.3%	4.3%	-	-	-	4.1%	2.9%
Pet insecticides-a	656	139	9	23	13	8	14	5	11	270	98	37	6	7
	100.0%	21.2%	1.4%	3.5%	2.0%	1.2%	2.1%	0.8%	1.7%	41.2%	14.9%	5.6%	0.9%	1.1%
Insect repellents	889	380	49	67	228	48	19	14	24	-	-	-	37	23
	100.0%	42.7%	5.5%	7.5%	25.6%	5.4%	2.1%	1.6%	2.7%	-	-	-	4.2%	2.6%

3A. LAWN FERTILIZERS

OVERVIEW

Within the past 12 months, lawn fertilizers were purchased by 68% of the respondents. Approximately 19% of the respondents indicated that they did not use lawn fertilizers in the past 12 months.

Table 3A-1: When was the Last Time you Bought Each of the Following Products? *Lawn Fertilizer*

	Region					Dwelling				Population density				Family income			
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: All Respondents	1498	290	357	571	280	1328	55*	58*	57*	369	769	360	269	321	370	254	284
	1015	179	250	400	186	913	38	32	32	252	520	243	138	192	277	190	218
Top 2 Box (Net)	68.0%	62.0%	70.0%	70.0%	66.0%	69.0%	69.0%	55.0%	56.0%	68.0%	68.0%	68.0%	51.0%	60.0%	75.0%	75.0%	77.0%
			A	A		GH								L	LM	LM	LM
Less than 6 months ago	568	102	124	232	110	512	20	23	13	153	290	125	65	90	161	121	131
	38.0%	35.0%	35.0%	41.0%	39.0%	39.0%	36.0%	40.0%	23.0%	41.0%	38.0%	35.0%	24.0%	28.0%	44.0%	48.0%	46.0%
				b		H		h		k					LM	LM	LM
6 months to 1 year ago	447	77	126	168	76	401	18	9	19	99	230	118	73	102	116	69	87
	30.0%	27.0%	35.0%	29.0%	27.0%	30.0%	33.0%	16.0%	33.0%	27.0%	30.0%	33.0%	27.0%	32.0%	31.0%	27.0%	31.0%
			AcD			G	G		G			i					
Bottom 2 Box (Net)	483	111	107	171	94	415	17	26	25	117	249	117	131	129	93	64	66
	32.0%	38.0%	30.0%	30.0%	34.0%	31.0%	31.0%	45.0%	44.0%	32.0%	32.0%	33.0%	49.0%	40.0%	25.0%	25.0%	23.0%
		BC						E	E				MNOP	NOP			
More than 1 year ago	201	40	47	72	42	179	7	5	10	44	115	42	35	54	48	33	31
	13.0%	14.0%	13.0%	13.0%	15.0%	13.0%	13.0%	9.0%	18.0%	12.0%	15.0%	12.0%	13.0%	17.0%	13.0%	13.0%	11.0%
														P			
Do not use product	282	71	60	99	52	236	10	21	15	73	134	75	96	75	45	31	35
	19.0%	24.0%	17.0%	17.0%	19.0%	18.0%	18.0%	36.0%	26.0%	20.0%	17.0%	21.0%	36.0%	23.0%	12.0%	12.0%	12.0%
		BCd						EF					MNOP	NOP			
Sigma	1498	290	357	571	280	1328	55	58	57	369	769	360	269	321	370	254	284
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base

GEOGRAPHIC REGION

The South and the Midwest have the highest reported lawn fertilizer usage, both with 70% in 2016. The West has 66% of respondents reporting purchasing, followed by the Northeast with 62%.

POPULATION DENSITY

Thirty-three percent of rural respondents, 30% of suburban respondents, and 27% of urban respondents purchased lawn fertilizers within the past 12 months.

FAMILY INCOME

As income levels increase, so does the purchase occurrence of lawn fertilizers. In the income group above \$100,000, 77% of respondents reported purchasing lawn fertilizer within the past 12 months. In both the income ranges between \$75,000 and \$100,000 and \$50,000 to \$75,000, 75% of respondents reported purchasing lawn fertilizer in 2016.

BRAND RECOLLECTION

Scotts is the leading brand reported by respondents as the brand purchased in 2016, with 55% of respondents purchasing it (including Scotts Turf Builder). Miracle-Gro Lawn Food is the second most cited brand, with 22%. Scotts is mostly preferred in the Midwest with 61% of the respondents reporting purchasing it. Miracle-Gro Lawn Food is most popular in South, with 25% of respondents reporting purchasing it.

Table 3A-2: What Brands of Lawn Fertilizer did you Purchase? If Possible, Please Refer to the Container

	Region					Dwelling			Population density					Family income			
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
Base: Have Used Lawn Fertilizer in the Past Year	1015	179	250	400	186	913	38*	32*	32*	252	520	243	138	192	277	190	218
Scotts	300	58	85	106	51	271	9	11	9	65	172	63	31	47	82	64	76
	30.0%	32.0%	34.0%	27.0%	27.0%	30.0%	24.0%	34.0%	28.0%	26.0%	33.0%	26.0%	22.0%	24.0%	30.0%	34.0%	35.0%
Scotts Turf Builder		C								IK					LM	LM	
	253	41	68	88	56	234	10	5	4	48	154	51	25	42	86	48	52
	25.0%	23.0%	27.0%	22.0%	30.0%	26.0%	26.0%	16.0%	13.0%	19.0%	30.0%	21.0%	18.0%	22.0%	31.0%	25.0%	24.0%
Miracle-Gro Lawn Food		C			h					IK					LMP		
	228	36	55	100	37	194	8	12	14	58	102	68	43	40	66	37	42
	22.0%	20.0%	22.0%	25.0%	20.0%	21.0%	21.0%	38.0%	44.0%	23.0%	20.0%	28.0%	31.0%	21.0%	24.0%	19.0%	19.0%
Ace Hardware	134	23	31	45	35	126	3	E	EF	54	60	20	J	MOP	36	26	25
	13.0%	13.0%	12.0%	11.0%	19.0%	14.0%	8.0%	3	2	21.0%	12.0%	8.0%	17	30	13.0%	14.0%	11.0%
Green Thumb	82	19	12	37	14	72	4	E	JK	26	43	13	8	13	24	19	18
	8.0%	11.0%	5.0%	9.0%	8.0%	8.0%	11.0%	6.0%	13.0%	10.0%	8.0%	5.0%	6.0%	7.0%	9.0%	10.0%	8.0%
Dr. Earth		B		B						K							
	57	8	11	25	13	50	4	2	1	26	24	7	6	5	19	10	17
	6.0%	4.0%	4.0%	6.0%	7.0%	5.0%	11.0%	6.0%	3.0%	10.0%	5.0%	3.0%	4.0%	3.0%	7.0%	5.0%	8.0%
Vigoro										JK					M		M
	44	3	11	24	6	41	2	1	0	13	25	6	7	6	12	9	10
	4.0%	2.0%	4.0%	6.0%	3.0%	4.0%	5.0%	3.0%	-	5.0%	5.0%	2.0%	5.0%	3.0%	4.0%	5.0%	5.0%
Green-Up		A															
	35	10	4	15	6	30	4	0	1	14	16	5	2	6	11	7	9
	3.0%	6.0%	2.0%	4.0%	3.0%	3.0%	11.0%	-	3.0%	6.0%	3.0%	2.0%	1.0%	3.0%	4.0%	4.0%	4.0%
Natural Guard		B				Eg				JK							
	32	7	8	12	5	27	5	0	0	17	14	1	1	4	15	3	9
	3.0%	4.0%	3.0%	3.0%	3.0%	3.0%	13.0%	-	-	7.0%	3.0%	0	1.0%	2.0%	5.0%	2.0%	4.0%
Pennington						EGH				JK	K				LmO		I
	30	2	7	16	5	27	2	1	0	10	14	6	1	3	11	6	9
	3.0%	1.0%	3.0%	4.0%	3.0%	3.0%	5.0%	3.0%	-	4.0%	3.0%	2.0%	1.0%	2.0%	4.0%	3.0%	4.0%
Fertilo		a								I							I
	30	4	5	11	10	28	2	0	0	15	12	3	6	0	7	6	11
	3.0%	2.0%	2.0%	3.0%	5.0%	3.0%	5.0%	-	-	6.0%	2.0%	1.0%	4.0%	-	3.0%	3.0%	5.0%
Espoma		b								JK			M		M	M	M
	27	9	5	5	8	23	2	2	0	15	11	1	2	2	5	10	8
	3.0%	5.0%	2.0%	1.0%	4.0%	3.0%	5.0%	6.0%	-	6.0%	2.0%	0	1.0%	1.0%	2.0%	5.0%	4.0%
Ironite		bC			C					JK	k				IMN		m
	22	5	4	8	5	19	3	0	0	13	8	1	3	2	6	7	4
	2.0%	3.0%	2.0%	2.0%	3.0%	2.0%	8.0%	-	-	5.0%	2.0%	0	2.0%	1.0%	2.0%	4.0%	2.0%
Greenview					E					JK					m		
	20	2	4	6	8	17	2	1	0	11	9	0	2	2	7	5	4
	2.0%	1.0%	2.0%	2.0%	4.0%	2.0%	5.0%	3.0%	-	4.0%	2.0%	-	1.0%	1.0%	3.0%	3.0%	2.0%
Lesco					abC					JK	K						
	20	5	5	7	3	17	3	0	0	8	11	1	1	0	4	6	9
	2.0%	3.0%	2.0%	2.0%	2.0%	2.0%	8.0%	-	-	3.0%	2.0%	0	1.0%	-	1.0%	3.0%	4.0%
					F					K	k				m	M	IMM

(Continued)

Table 3A-2. What Brand(s) of Lawn Fertilizer did you Purchase? If Possible, Please Refer to the Container

	Region					Dwelling			Population density				Family Income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Threet+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Sta Green	19	4	4	10	1	17	0	1	1	5	11	3	2	3	5	3	6
	2.0%	2.0%	2.0%	3.0%	1.0%	2.0%	-	3.0%	3.0%	2.0%	2.0%	1.0%	1.0%	2.0%	2.0%	2.0%	3.0%
The Andersons	19	6	6	3	4	18	1	0	0	11	6	2	1	3	7	4	4
	2.0%	3.0%	2.0%	1.0%	2.0%	2.0%	3.0%	-	-	4.0%	1.0%	1.0%	1.0%	2.0%	3.0%	2.0%	2.0%
Natural Alternative	C	c	c	c	c	c	c	c	c	JK	JK	JK	JK	JK	JK	JK	JK
	18	4	3	9	2	15	2	1	0	8	9	1	0	2	6	7	3
Milorganite	2.0%	2.0%	1.0%	2.0%	1.0%	2.0%	5.0%	3.0%	-	3.0%	2.0%	0	-	1.0%	2.0%	4.0%	1.0%
	16	1	8	7	0	15	1	0	0	7	6	3	2	3	2	3	6
Fortify	2.0%	1.0%	3.0%	2.0%	-	2.0%	3.0%	-	-	3.0%	1.0%	1.0%	1.0%	2.0%	1.0%	2.0%	3.0%
	15	9	1	4	1	12	3	0	0	8	7	0	0	1	4	7	3
Jonathan Green	1.0%	5.0%	0	1.0%	1.0%	1.0%	8.0%	-	-	3.0%	1.0%	-	-	1.0%	1.0%	4.0%	1.0%
	BCD	BCD	BCD	BCD	BCD	BCD	BCD	BCD	BCD	JK	k	LM	LM	LM	LM	LM	n
Hi-Yield	15	3	1	6	5	12	3	0	0	10	5	0	2	2	4	4	3
	1.0%	2.0%	0	2.0%	3.0%	1.0%	8.0%	-	-	4.0%	1.0%	-	1.0%	1.0%	1.0%	2.0%	1.0%
Howard Johnsons	B	B	B	B	B	B	B	B	B	JK	JK	JK	JK	JK	JK	JK	JK
	15	5	1	4	5	15	0	0	0	8	7	0	0	0	5	6	4
Jobes Organic Lawn Food	1.0%	3.0%	0	1.0%	3.0%	2.0%	-	-	-	3.0%	1.0%	-	-	-	2.0%	3.0%	2.0%
	14	3	5	6	0	12	1	1	0	4	8	2	1	1	3	4	5
Ultragreen (Lilly Miller)	1.0%	2.0%	2.0%	2.0%	-	1.0%	3.0%	3.0%	-	2.0%	2.0%	1.0%	1.0%	1.0%	1.0%	2.0%	2.0%
	13	1	2	4	6	12	0	1	0	3	10	0	1	1	5	3	3
Sunniland	1.0%	1.0%	1.0%	1.0%	3.0%	1.0%	-	3.0%	-	1.0%	2.0%	-	1.0%	1.0%	2.0%	2.0%	1.0%
	11	0	2	8	1	9	2	0	0	7	4	0	1	1	3	4	2
Ultimate	1.0%	-	1.0%	2.0%	1.0%	1.0%	5.0%	-	-	3.0%	1.0%	-	1.0%	1.0%	1.0%	2.0%	1.0%
	10	2	2	4	2	9	1	0	0	5	5	0	1	1	3	2	3
Ringer	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	3.0%	-	-	2.0%	1.0%	-	1.0%	1.0%	1.0%	1.0%	1.0%
	5	1	1	2	1	5	0	0	0	3	1	1	1	0	1	2	1
Other	0	1.0%	0	1.0%	1.0%	1.0%	-	-	-	1.0%	0	0	1.0%	-	0	1.0%	0
	18	3	7	5	3	18	0	0	0	1	9	8	1	6	5	1	5
Don't know	2.0%	2.0%	3.0%	1.0%	2.0%	2.0%	-	-	-	0	2.0%	3.0%	1.0%	3.0%	2.0%	1.0%	2.0%
	90	19	21	38	12	71	5	5	9	16	43	31	22	21	22	10	15
Sigma	9.0%	11.0%	8.0%	10.0%	6.0%	8.0%	13.0%	16.0%	28.0%	6.0%	8.0%	13.0%	16.0%	11.0%	8.0%	5.0%	7.0%
	1607	296	380	621	310	1429	83	50	45	498	810	299	191	247	471	328	370
158.0% 165.0% 152.0% 155.0% 167.0% 157.0% 218.0% 156.0% 141.0% 198.0% 156.0% 123.0% 138.0% 129.0% 170.0% 173.0% 170.0%																	
Proportions/Means: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base																	

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base

PRODUCT FORM

Sixty-five percent of the analyzed respondents report granulized lawn fertilizer as the most common product form purchased in 2016. The granular form is most common in the West, followed by the South. Liquid concentrates rank second, accounting for 20% of the responses. Ready-to-use liquids rank third, accounting for 19% of the responses. Most ready-to-use liquids are purchased in the Northeast in 2016.

Table 3A-3: What Form was the Lawn Fertilizer?

	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Base: Have Used Lawn Fertilizer in the Past Year		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	1015	179	250	400	186	913	38*	32*	32*	252	520	243	138	192	277	190	218
Granules	655	97	161	263	134	604	20	17	14	156	339	160	80	119	184	132	140
	65.0%	54.0%	64.0%	66.0%	72.0%	66.0%	53.0%	53.0%	44.0%	62.0%	65.0%	66.0%	58.0%	62.0%	66.0%	69.0%	64.0%
Liquid concentrate			A	A	Ab	fH									I	L	
	204	39	60	74	31	184	8	8	4	59	103	42	23	30	56	46	49
Ready to use (RTU) liquid with applicator	20.0%	22.0%	24.0%	19.0%	17.0%	20.0%	21.0%	25.0%	13.0%	23.0%	20.0%	17.0%	17.0%	16.0%	20.0%	24.0%	22.0%
			cd								k					IM	m
Water soluble powder	194	40	42	78	34	174	7	6	7	67	90	37	25	32	54	31	52
	19.0%	22.0%	17.0%	20.0%	18.0%	19.0%	18.0%	19.0%	22.0%	27.0%	17.0%	15.0%	18.0%	17.0%	19.0%	16.0%	24.0%
RTU liquid without applicator										JK							mo
	105	20	22	40	23	91	7	4	3	39	47	19	16	13	32	17	27
Other	10.0%	11.0%	9.0%	10.0%	12.0%	10.0%	18.0%	13.0%	9.0%	15.0%	9.0%	8.0%	12.0%	7.0%	12.0%	9.0%	12.0%
							e			JK					m		m
Don't know	50	12	11	17	10	45	4	1	0	24	22	4	3	6	15	10	16
	5.0%	7.0%	4.0%	4.0%	5.0%	5.0%	11.0%	3.0%	-	10.0%	4.0%	2.0%	2.0%	3.0%	5.0%	5.0%	7.0%
Sigma							h			JK	k						Lm
	1	1	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0
Proportions/Mean	0	1.0%	-	-	-	0	-	-	-	0	-	-	-	-	0	-	-
Don't know	39	16	4	16	3	31	1	2	5	7	19	13	7	9	10	6	7
	4.0%	9.0%	2.0%	4.0%	2.0%	3.0%	3.0%	6.0%	16.0%	3.0%	4.0%	5.0%	5.0%	5.0%	4.0%	3.0%	3.0%
Sigma		BCD		b					Ef								
	1248	225	300	488	235	1130	47	38	33	353	620	275	154	209	352	242	291
Proportions/Mean	123.0%	126.0%	120.0%	122.0%	126.0%	124.0%	124.0%	119.0%	103.0%	140.0%	119.0%	113.0%	112.0%	109.0%	127.0%	127.0%	133.0%
	Proportions/Mean: Columns Tested [5%, 10% risk level] - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base																

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base

RETAIL OUTLET

Approximately 42% of the respondents report that they purchased lawn fertilizer products at a home improvement center, such as Home Depot or Lowes. Discount or mass-merchandise stores, such as K-Mart or Walmart, rank second and are listed by 32% of respondents. Lawn and garden center purchases are reported by 10%, with the highest purchase rate at this type of outlet by higher income respondents (13% to 14%). Respondents at the higher income levels are less likely to purchase at discount or mass-merchandise stores. Urban respondents are more likely to purchase at home improvement centers and less likely to purchase at discount or mass-merchandise stores.

Table 3A-1: What Place are Each of the Following Purchased Most Often? "Lawn Fertilizer"

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used 'Lawn fertilizer' in Past Year	1015	179	250	400	186	913	38*	32*	32*	252	520	243	138	192	277	190	218
Home improvement center (e.g. Home Depot, Lowes)	426	72	94	193	67	391	16	11	8	100	231	95	50	66	118	96	96
	42.0%	40.0%	38.0%	48.0%	36.0%	43.0%	42.0%	34.0%	25.0%	40.0%	44.0%	39.0%	36.0%	34.0%	43.0%	51.0%	44.0%
				aBD		H									m	LMn	M
Discount/mass merchandise store (e.g. Wal-Mart, Kmart)	320	51	84	121	64	279	14	12	15	89	144	87	51	87	82	48	52
	32.0%	28.0%	34.0%	30.0%	34.0%	31.0%	37.0%	38.0%	47.0%	35.0%	28.0%	36.0%	37.0%	45.0%	30.0%	25.0%	24.0%
									e	J		J	OP	NOP			
Lawn and garden center/nursery	104	24	31	31	18	98	1	3	2	28	62	14	10	11	36	16	31
	10.0%	13.0%	12.0%	8.0%	10.0%	11.0%	3.0%	9.0%	6.0%	11.0%	12.0%	6.0%	7.0%	6.0%	13.0%	8.0%	14.0%
		C	c							K	K				IM		LMO
Hardware store (e.g. True Value)	46	9	15	11	11	45	0	0	1	12	21	13	5	7	11	11	12
	5.0%	5.0%	6.0%	3.0%	6.0%	5.0%	-	-	3.0%	5.0%	4.0%	5.0%	4.0%	4.0%	4.0%	6.0%	6.0%
			C		c												
Farm supply store	33	7	8	12	6	27	2	2	2	7	13	13	4	7	7	8	7
	3.0%	4.0%	3.0%	3.0%	3.0%	3.0%	5.0%	6.0%	6.0%	3.0%	3.0%	5.0%	3.0%	4.0%	3.0%	4.0%	3.0%
												J					

(Continued)

Table 3A-4: What Place are Each of the Following Purchased Most Often? "Lawn Fertilizer"

	Region					Dwelling			Population density				Family income					
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +	
Supermarket/grocery store	22	3	5	9	5	18	2	1	1	4	13	5	4	3	7	4	4	
	2.0%	2.0%	2.0%	2.0%	3.0%	2.0%	5.0%	3.0%	3.0%	2.0%	3.0%	2.0%	3.0%	2.0%	3.0%	2.0%	2.0%	
Warehouse/wholesale club	15	3	1	4	7	14	1	0	0	5	8	2	0	1	3	3	8	
	1.0%	2.0%	0	1.0%	4.0%	2.0%	3.0%	-	-	2.0%	2.0%	1.0%	-	1.0%	1.0%	2.0%	4.0%	
	BC																	LMn
Mail order/catalog	6	0	2	2	2	4	1	0	1	2	3	1	1	2	0	1	2	
	1.0%	-	1.0%	1.0%	1.0%	0	3.0%	-	3.0%	1.0%	1.0%	0	1.0%	1.0%	-	1.0%	1.0%	
Other	e							E				n						
	20	6	6	6	2	19	1	0	0	3	11	6	2	6	6	2	4	
	2.0%	3.0%	2.0%	2.0%	1.0%	2.0%	3.0%	-	-	1.0%	2.0%	2.0%	1.0%	3.0%	2.0%	1.0%	2.0%	
Don't know	23	4	4	11	4	18	0	3	2	2	14	7	11	2	7	1	2	
	2.0%	2.0%	2.0%	3.0%	2.0%	2.0%	-	9.0%	6.0%	1.0%	3.0%	3.0%	8.0%	1.0%	3.0%	1.0%	1.0%	
Sigma								Ef	e	i	i	MNOP						
	1015	179	250	400	186	913	38	32	32	252	520	243	138	192	277	190	218	
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base

PRODUCT TYPE

The majority of the respondents indicated that lawn fertilizers with weed killer are preferred over others and account for 55% in 2016. Purchases of straight lawn fertilizers account for 33%. Fertilizers with weed killers are most indicated in the West (63%) and least in the Northeast (50%). Eleven percent of all respondents purchase a combination lawn fertilizer with two or more pesticides.

Respondents purchasing straight lawn fertilizers had the greatest percentage (36%) in the \$25,000 to \$50,000 income range. Eighteen percent of respondents report purchasing fertilizers that included an insecticide, and 10% reported purchasing one with a fungicide.

PRODUCT USAGE

Combination fertilizer products are purchased mainly for the treatment of weeds. Weeds most cited include crabgrass (54%), dandelions (51%), clover (20%), and other weeds (20%). Crabgrass is highest in the Midwest and West, both with 59%. Sixty percent of the respondents said that they used insect killers to get rid of insects, with fire ants and grubs mentioned most often.

Table 3A-5: Did the Lawn Fertilizer you Bought Contain Either a Weed, Fungus, or Insect Killer or was it a Straight Fertilizer?

	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used Lawn Fertilizer in the Past Year	1015	179	250	400	186	913	38*	32*	32*	252	520	243	138	192	277	190	218
Had a weed killer	563	89	148	209	117	513	21	14	15	157	282	124	68	102	160	112	121
	55.0%	50.0%	59.0%	52.0%	63.0%	56.0%	55.0%	44.0%	47.0%	62.0%	54.0%	51.0%	49.0%	53.0%	58.0%	59.0%	56.0%
			ac		AC						JK						I
Had an insect killer	187	33	35	84	35	167	7	7	6	58	93	36	27	21	57	37	45
	18.0%	18.0%	14.0%	21.0%	19.0%	18.0%	18.0%	22.0%	19.0%	23.0%	18.0%	15.0%	20.0%	11.0%	21.0%	19.0%	21.0%
			B								JK		M		M	M	M
Had two or more pesticides in it	113	37	23	36	17	98	5	7	3	34	55	24	18	20	33	25	17
	11.0%	21.0%	9.0%	9.0%	9.0%	11.0%	13.0%	22.0%	9.0%	13.0%	11.0%	10.0%	13.0%	10.0%	12.0%	13.0%	8.0%
			BCD					E									p
Had a fungus killer	102	21	19	45	17	89	10	0	3	36	50	16	14	10	26	28	24
	10.0%	12.0%	8.0%	11.0%	9.0%	10.0%	26.0%	-	9.0%	14.0%	10.0%	7.0%	10.0%	5.0%	9.0%	15.0%	11.0%
						g	EGh		g	JK			m		m	Mn	M
Was a straight fertilizer	330	57	84	142	47	292	12	11	15	61	177	92	47	70	92	45	76
	33.0%	32.0%	34.0%	36.0%	25.0%	32.0%	32.0%	34.0%	47.0%	24.0%	34.0%	38.0%	34.0%	36.0%	33.0%	24.0%	35.0%
			d	D					e		I	I	O	O	O		O
Sigma	1295	237	309	516	233	1159	55	39	42	346	657	292	174	223	368	247	283
	128.0%	132.0%	124.0%	129.0%	125.0%	127.0%	145.0%	122.0%	131.0%	137.0%	126.0%	120.0%	126.0%	116.0%	133.0%	130.0%	130.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base

Table 3A-6. What were you Trying to Prevent or Get Rid of when you Used the Fertilizer with a Weed/Fungus/Insect Killer?

	Region					Dwelling			Population density				Family income							
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +			
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P				
Base: Have Used Lawn Fertilizer in the Past Year	1015	179	250	400	186	913	38*	32*	32*	252	520	243	138	192	277	190	218			
Weeds (Net)	792	137	201	308	146	707	32	25	28	196	413	183	107	140	221	161	163			
	78.0%	77.0%	80.0%	77.0%	78.0%	77.0%	84.0%	78.0%	88.0%	78.0%	79.0%	75.0%	78.0%	73.0%	80.0%	85.0%	75.0%			
																m	IMP			
Crabgrass	561	97	147	207	110	507	18	18	18	137	296	128	62	96	159	124	120			
	55.0%	54.0%	59.0%	52.0%	59.0%	56.0%	47.0%	56.0%	56.0%	54.0%	57.0%	53.0%	45.0%	50.0%	57.0%	65.0%	55.0%			
Dandelions	c					c												L	LMnP	I
	529	91	158	176	104	476	19	13	21	123	274	132	75	93	149	104	108			
	52.0%	51.0%	63.0%	44.0%	56.0%	52.0%	50.0%	41.0%	66.0%	49.0%	53.0%	54.0%	54.0%	48.0%	54.0%	55.0%	50.0%			
Clover	AC					C	g													
	266	35	78	100	53	237	14	9	6	73	136	57	35	42	72	57	60			
	26.0%	20.0%	31.0%	25.0%	28.0%	26.0%	37.0%	28.0%	19.0%	29.0%	26.0%	23.0%	25.0%	22.0%	26.0%	30.0%	28.0%			
Other weeds/Diseases	Ac					A												m		
	250	36	68	101	45	228	7	5	10	54	127	69	38	47	75	43	47			
	25.0%	20.0%	27.0%	25.0%	24.0%	25.0%	18.0%	16.0%	31.0%	21.0%	24.0%	28.0%	28.0%	24.0%	27.0%	23.0%	22.0%			
Insects (Net)	a					i														
	614	112	137	267	98	546	26	23	19	163	307	144	95	109	150	128	132			
	60.0%	63.0%	55.0%	67.0%	53.0%	60.0%	68.0%	72.0%	59.0%	65.0%	59.0%	59.0%	69.0%	57.0%	54.0%	67.0%	61.0%			
Fire Ants	d					BD												MN	MN	
	260	35	36	153	36	234	9	13	4	71	138	51	48	44	64	47	57			
	26.0%	20.0%	14.0%	38.0%	19.0%	26.0%	24.0%	41.0%	13.0%	28.0%	27.0%	21.0%	35.0%	23.0%	23.0%	25.0%	26.0%			
Grubs	ABD					h	eH			k	k	MNOp								
	241	55	67	90	29	223	10	4	4	60	121	60	31	33	66	59	52			
	24.0%	31.0%	27.0%	23.0%	16.0%	24.0%	26.0%	13.0%	13.0%	24.0%	23.0%	25.0%	22.0%	17.0%	24.0%	31.0%	24.0%			
		CD	D	d													m	IMn	m	

(Continued)

Table 3A-6: What were you Trying to Prevent or Get Rid of when you Used the Fertilizer with a Weed/Fungus/Insect Killer?

	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Japanese Beetles	122	29	30	49	14	108	7	3	4	27	62	33	23	22	27	28	22
	12.0%	16.0%	12.0%	12.0%	8.0%	12.0%	18.0%	9.0%	13.0%	11.0%	12.0%	14.0%	17.0%	11.0%	10.0%	15.0%	10.0%
	D			d									Np				
Chinchbugs	114	23	23	48	20	104	7	2	1	50	52	12	12	13	34	33	22
	11.0%	13.0%	9.0%	12.0%	11.0%	11.0%	18.0%	6.0%	3.0%	20.0%	10.0%	5.0%	9.0%	7.0%	12.0%	17.0%	10.0%
							h			JK	K				m	LMP	
Mole Cricket	113	24	25	41	23	103	4	4	2	38	58	17	18	11	34	21	29
	11.0%	13.0%	10.0%	10.0%	12.0%	11.0%	11.0%	13.0%	6.0%	15.0%	11.0%	7.0%	13.0%	6.0%	12.0%	11.0%	13.0%
										K	k		M		M	m	M
Other Insects/Weeds	142	26	35	50	31	122	5	6	9	29	72	41	25	36	32	23	26
	14.0%	15.0%	14.0%	13.0%	17.0%	13.0%	13.0%	19.0%	28.0%	12.0%	14.0%	17.0%	18.0%	19.0%	12.0%	12.0%	12.0%
									E			i	n	Nop			
Diseases (Net)	197	38	38	85	36	165	12	8	12	59	101	37	34	34	43	46	40
	19.0%	21.0%	15.0%	21.0%	19.0%	18.0%	32.0%	25.0%	38.0%	23.0%	19.0%	15.0%	25.0%	18.0%	16.0%	24.0%	18.0%
				b			E		E	K			N			N	
Fungus	197	38	38	85	36	165	12	8	12	59	101	37	34	34	43	46	40
	19.0%	21.0%	15.0%	21.0%	19.0%	18.0%	32.0%	25.0%	38.0%	23.0%	19.0%	15.0%	25.0%	18.0%	16.0%	24.0%	18.0%
				b			E		E	K			N			N	
Used straight fertilizer	154	25	43	63	23	138	5	7	4	28	81	45	19	40	42	19	34
	15.0%	14.0%	17.0%	16.0%	12.0%	15.0%	13.0%	22.0%	13.0%	11.0%	16.0%	19.0%	14.0%	21.0%	15.0%	10.0%	16.0%
											i	l		IO			o
Sigma	2949	514	748	1163	524	2645	117	92	95	749	1518	682	420	511	797	604	617
	291.0%	287.0%	299.0%	291.0%	282.0%	290.0%	308.0%	288.0%	297.0%	297.0%	292.0%	281.0%	304.0%	266.0%	288.0%	318.0%	283.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base

3B. GARDEN FERTILIZERS

OVERVIEW

Overall, 58% of the respondents report purchasing garden fertilizer in the past 12 months.

Table 3B-1: When was the Last Time you Bought Each of the Following Products? "Garden Fertilizer"

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: All Respondents	1498	290	357	571	280	1328	55*	58*	57*	369	769	360	269	321	370	254	284
	870	164	194	336	176	779	35	27	29	225	428	217	121	181	228	167	173
Top 2 Box (Net)	58.0%	57.0%	54.0%	59.0%	63.0%	59.0%	64.0%	47.0%	51.0%	61.0%	56.0%	60.0%	45.0%	56.0%	62.0%	66.0%	61.0%
					B	g	g			j				L	L	LM	L
Less than 6 months ago	430	84	87	167	92	385	18	14	13	119	216	95	59	70	111	93	97
	29.0%	29.0%	24.0%	29.0%	33.0%	29.0%	33.0%	24.0%	23.0%	32.0%	28.0%	26.0%	22.0%	22.0%	30.0%	37.0%	34.0%
					B					k					LM	LMn	LM
6 months to 1 year ago	440	80	107	169	84	394	17	13	16	106	212	122	62	111	117	74	76
	29.0%	28.0%	30.0%	30.0%	30.0%	30.0%	31.0%	22.0%	28.0%	29.0%	28.0%	34.0%	23.0%	35.0%	32.0%	29.0%	27.0%
												J		LP	L		
Bottom 2 Box (Net)	628	126	163	235	104	549	20	31	28	144	341	143	148	140	142	87	111
	42.0%	43.0%	46.0%	41.0%	37.0%	41.0%	36.0%	53.0%	49.0%	39.0%	44.0%	40.0%	55.0%	44.0%	38.0%	34.0%	39.0%
			D					ef			i		MNOP	O			
More than 1 year ago	207	46	45	77	39	182	8	6	11	42	123	42	38	48	52	25	44
	14.0%	16.0%	13.0%	13.0%	14.0%	14.0%	15.0%	10.0%	19.0%	11.0%	16.0%	12.0%	14.0%	15.0%	14.0%	10.0%	15.0%
											lk			o			o
Do not use product	421	80	118	158	65	367	12	25	17	102	218	101	110	92	90	62	67
	28.0%	28.0%	33.0%	28.0%	23.0%	28.0%	22.0%	43.0%	30.0%	28.0%	28.0%	28.0%	41.0%	29.0%	24.0%	24.0%	24.0%
			CD					EF						MNOP			
Sigma	1498	290	357	571	280	1328	55	58	57	369	769	360	269	321	370	254	284
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base

GEOGRAPHIC REGION

Respondents in the West are slightly more likely to purchase garden fertilizers, with 63% reporting their purchases in 2016, compared to respondents in the South, Midwest, and Northeast with 59%, 54%, and 57%, respectively.

POPULATION DENSITY

In 2016, the use of garden fertilizers is higher in urban areas, where 61% of respondents report purchasing, and slightly lower in suburban and rural areas, where 56% and 60% of respondents, respectively, report purchasing within the last 12 months.

BRAND RECOLLECTION

Scotts Miracle-Gro is the garden fertilizer brand listed as the most frequently purchased in 2016, accounting for 43% of the responses. There is relative consistency across all regions, population densities, and income levels for Miracle-Gro. The closest competitors to Miracle-Gro are Scotts with 25%, Bayer Advanced with 10%, Dr. Earth with 8%, and Vigoro with 5%.

Table 3B-2: What Brand(s) of Garden Fertilizer did you Purchase? If Possible, Please Refer to the Container

	Region					Dwelling				Population density			Family income					
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Threet+ family house	Mobile home/ trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +	
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
Base: Have Used Garden Fertilizer in the Past Year	870	164	194	336	176	779	35*	27**	29**	225	428	217	121	181	228	167	173	
Miracle Gro	374	63	94	146	71	332	16	9	17	74	192	108	56	80	98	69	71	
	43.0%	38.0%	48.0%	43.0%	40.0%	43.0%	46.0%	33.0%	59.0%	33.0%	45.0%	50.0%	46.0%	44.0%	43.0%	41.0%	41.0%	
	a										I	I						
Scotts	216	50	50	74	42	190	9	8	9	48	113	55	22	48	67	45	34	
	25.0%	30.0%	26.0%	22.0%	24.0%	24.0%	26.0%	30.0%	31.0%	21.0%	26.0%	25.0%	18.0%	27.0%	29.0%	27.0%	20.0%	
	C													I	LP	I		
Bayer Advanced	84	10	12	39	23	79	1	3	1	33	34	17	8	14	26	17	19	
	10.0%	6.0%	6.0%	12.0%	13.0%	10.0%	3.0%	11.0%	3.0%	15.0%	8.0%	8.0%	7.0%	8.0%	11.0%	10.0%	11.0%	
	aB										AB	JK						
Dr. Earth	68	16	11	26	15	58	5	3	2	31	31	6	6	11	24	15	12	
	8.0%	10.0%	6.0%	8.0%	9.0%	7.0%	14.0%	11.0%	7.0%	14.0%	7.0%	3.0%	5.0%	6.0%	11.0%	9.0%	7.0%	
											JK	K	I					
Vigoro	44	7	8	17	12	43	0	0	1	19	20	5	4	3	13	8	16	
	5.0%	4.0%	4.0%	5.0%	7.0%	6.0%	-	-	3.0%	8.0%	5.0%	2.0%	3.0%	2.0%	6.0%	5.0%	9.0%	
											JK						M	m
Garden Rich	35	7	5	14	9	29	5	1	0	17	17	1	3	4	9	10	9	
	4.0%	4.0%	3.0%	4.0%	5.0%	4.0%	14.0%	4.0%	-	8.0%	4.0%	0	2.0%	2.0%	4.0%	6.0%	5.0%	
	E										JK	K	m					
Natural Guard	34	4	8	14	8	32	1	0	1	14	15	5	1	9	13	4	7	
	4.0%	2.0%	4.0%	4.0%	5.0%	4.0%	3.0%	-	3.0%	6.0%	4.0%	2.0%	1.0%	5.0%	6.0%	2.0%	4.0%	
											K					L	L	I
Osmocote	34	6	6	15	7	30	2	1	1	10	17	7	4	11	5	5	9	
	4.0%	4.0%	3.0%	4.0%	4.0%	4.0%	6.0%	4.0%	3.0%	4.0%	4.0%	3.0%	3.0%	6.0%	2.0%	3.0%	5.0%	
	N																	
(Continued)																		

Table 3B-2. What Brand(s) of Garden Fertilizer did you Purchase? (If Possible, Please Refer to the Container)

P	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Green Light	32	6	8	11	7	25	3	1	3	11	14	7	5	5	8	9	5
	4.0%	4.0%	4.0%	3.0%	4.0%	3.0%	9.0%	4.0%	10.0%	5.0%	3.0%	3.0%	4.0%	3.0%	4.0%	5.0%	3.0%
							e										
Espoma	32	8	4	12	8	29	1	2	0	16	11	5	7	3	9	8	5
	4.0%	5.0%	2.0%	4.0%	5.0%	4.0%	3.0%	7.0%	-	7.0%	3.0%	2.0%	6.0%	2.0%	4.0%	5.0%	3.0%
										JK			m			m	
Earth Juice	29	6	8	10	5	27	2	0	0	14	15	0	1	4	9	6	9
	3.0%	4.0%	4.0%	3.0%	3.0%	3.0%	6.0%	-	-	6.0%	4.0%	-	1.0%	2.0%	4.0%	4.0%	5.0%
										K	K				l		L
Jobe's Organics	27	5	6	11	5	25	0	2	0	10	13	4	5	3	5	4	10
	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	-	7.0%	-	4.0%	3.0%	2.0%	4.0%	2.0%	2.0%	2.0%	6.0%
																	Mn
Dynamite	25	4	2	9	10	22	2	1	0	11	13	1	5	5	4	5	6
	3.0%	2.0%	1.0%	3.0%	6.0%	3.0%	6.0%	4.0%	-	5.0%	3.0%	0	4.0%	3.0%	2.0%	3.0%	3.0%
					Bc					K	K						
Shultz	25	3	7	7	8	23	1	1	0	10	12	3	1	4	9	5	6
	3.0%	2.0%	4.0%	2.0%	5.0%	3.0%	3.0%	4.0%	-	4.0%	3.0%	1.0%	1.0%	2.0%	4.0%	3.0%	3.0%
										k					l		
Fertlome	25	9	4	5	7	21	3	1	0	11	13	1	1	4	10	5	5
	3.0%	5.0%	2.0%	1.0%	4.0%	3.0%	9.0%	4.0%	-	5.0%	3.0%	0	1.0%	2.0%	4.0%	3.0%	3.0%
		bC			c		E			K	K				l		
Country Cottage	24	8	5	4	7	22	2	0	0	11	8	5	1	3	6	7	7
	3.0%	5.0%	3.0%	1.0%	4.0%	3.0%	6.0%	-	-	5.0%	2.0%	2.0%	1.0%	2.0%	3.0%	4.0%	4.0%
		C			C					J						l	l
Hi-Yield	21	5	4	6	6	18	1	2	0	7	8	6	1	5	7	3	5
	2.0%	3.0%	2.0%	2.0%	3.0%	2.0%	3.0%	7.0%	-	3.0%	2.0%	3.0%	1.0%	3.0%	3.0%	2.0%	3.0%

(Continued)

Table 3B-2: What Brand(s) of Garden Fertilizer did you Purchase? If Possible, Please Refer to the Container

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Jobe's Outdoor	21	6	1	8	6	21	0	0	0	8	8	5	4	1	7	1	8
	2.0%	4.0%	1.0%	2.0%	3.0%	3.0%	-	-	-	4.0%	2.0%	2.0%	3.0%	1.0%	3.0%	1.0%	5.0%
		B			B								mo		mo		MO
Pennington	18	1	4	10	3	16	0	2	0	5	9	4	1	2	9	5	1
	2.0%	1.0%	2.0%	3.0%	2.0%	2.0%	-	7.0%	-	2.0%	2.0%	2.0%	1.0%	1.0%	4.0%	3.0%	1.0%
				a											ImP	p	
Sta Green	17	1	2	10	4	16	0	0	1	5	6	6	2	3	4	3	5
	2.0%	1.0%	1.0%	3.0%	2.0%	2.0%	-	-	3.0%	2.0%	1.0%	3.0%	2.0%	2.0%	2.0%	2.0%	3.0%
				a													
Fortify	15	3	3	4	5	14	1	0	0	6	8	1	1	2	5	2	5
	2.0%	2.0%	2.0%	1.0%	3.0%	2.0%	3.0%	-	-	3.0%	2.0%	0	1.0%	1.0%	2.0%	1.0%	3.0%
										k							
Lilly Miller	15	3	1	3	8	15	0	0	0	5	8	2	0	1	4	5	5
	2.0%	2.0%	1.0%	1.0%	5.0%	2.0%	-	-	-	2.0%	2.0%	1.0%	-	1.0%	2.0%	3.0%	3.0%
					BC											Im	Im
TerraCycle	14	0	4	6	4	13	1	0	0	11	3	0	2	1	2	5	4
	2.0%	-	2.0%	2.0%	2.0%	2.0%	3.0%	-	-	5.0%	1.0%	-	2.0%	1.0%	1.0%	3.0%	2.0%
			a	a	a					JK						m	
Easy Gardener	13	3	3	5	2	11	0	1	1	7	6	0	1	0	5	3	4
	1.0%	2.0%	2.0%	1.0%	1.0%	1.0%	-	4.0%	3.0%	3.0%	1.0%	-	1.0%	-	2.0%	2.0%	2.0%
										K	k				M	m	M
Ironite	13	0	1	8	4	12	1	0	0	8	3	2	2	2	3	2	4
	1.0%	-	1.0%	2.0%	2.0%	2.0%	3.0%	-	-	4.0%	1.0%	1.0%	2.0%	1.0%	1.0%	1.0%	2.0%
			A	a						Jk							
Hoffman	11	0	3	4	4	9	2	0	0	5	6	0	0	1	3	4	3
	1.0%	-	2.0%	1.0%	2.0%	1.0%	6.0%	-	-	2.0%	1.0%	-	-	1.0%	1.0%	2.0%	2.0%
				a		E				K	k					l	

(Continued)

Table 3B-2. What Brand(s) of Garden Fertilizer did you Purchase? If Possible, Please Refer to the Container

	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/ trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Milorganite	11	1	3	3	4	10	1	0	0	7	2	2	0	3	3	3	2
	1.0%	1.0%	2.0%	1.0%	2.0%	1.0%	3.0%	-	-	3.0%	0	1.0%	-	2.0%	1.0%	2.0%	1.0%
	J																
Woodace	6	1	2	2	1	4	2	0	0	5	1	0	0	1	2	1	2
	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	6.0%	-	-	2.0%	0	-	-	1.0%	1.0%	1.0%	1.0%
	EJK																
Whitney Farms	5	0	1	2	2	4	1	0	0	3	1	1	0	2	1	1	1
	1.0%	-	1.0%	1.0%	1.0%	1.0%	3.0%	-	-	1.0%	0	0	-	1.0%	0	1.0%	1.0%
	ej																
Other	12	1	3	3	5	11	0	0	1	2	4	6	0	4	3	4	1
	1.0%	1.0%	2.0%	1.0%	3.0%	1.0%	-	-	3.0%	1.0%	1.0%	3.0%	-	2.0%	1.0%	2.0%	1.0%
	cJl																
Don't know	71	18	15	27	11	63	2	3	3	18	31	22	16	18	16	9	12
	8.0%	11.0%	8.0%	8.0%	6.0%	8.0%	6.0%	11.0%	10.0%	8.0%	7.0%	10.0%	13.0%	10.0%	7.0%	5.0%	7.0%
	nOp																
Sigma	1371	255	288	515	313	1224	65	41	41	442	642	287	160	257	389	273	292
	158.0%	155.0%	148.0%	153.0%	178.0%	157.0%	186.0%	152.0%	141.0%	196.0%	150.0%	132.0%	132.0%	142.0%	171.0%	163.0%	169.0%

Proportions/Means: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

PRODUCT FORM

Granular garden fertilizer remains the most frequently purchased form of fertilizer, accounting for 48% of the responses. Liquid concentrate garden fertilizers account for 24% of the responses in 2016. Granular garden fertilizers are popular among all regions, with the highest use in the West with 51% and the lowest in the Northeast with 41%. Ready-to-use liquid with applicator ranks third, with 18% of total responses.

Table 3B.3: What Form was the Garden Fertilizer?

	Region					Dwelling			Population density					Family income			
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
Base: Have Used Garden Fertilizer in the Past Year	870	164	194	336	176	779	35*	27**	29**	225	428	217	121	181	228	167	173
Granules	415	67	93	166	89	378	10	13	14	95	200	120	56	92	109	79	79
	48.0%	41.0%	48.0%	49.0%	51.0%	49.0%	29.0%	48.0%	48.0%	42.0%	47.0%	55.0%	46.0%	51.0%	48.0%	47.0%	46.0%
Liquid concentrate				a	a	F						IJ					
	213	40	48	83	42	194	7	8	4	70	104	39	25	33	60	40	55
	24.0%	24.0%	25.0%	25.0%	24.0%	25.0%	20.0%	30.0%	14.0%	31.0%	24.0%	18.0%	21.0%	18.0%	26.0%	24.0%	32.0%
Ready to use (RTU) liquid with applicator										JK	k				m		LM
	160	29	40	60	31	140	9	4	7	51	81	28	23	34	31	31	41
	18.0%	18.0%	21.0%	18.0%	18.0%	18.0%	26.0%	15.0%	24.0%	23.0%	19.0%	13.0%	19.0%	19.0%	14.0%	19.0%	24.0%
Water soluble powder										K	k						N
	138	20	34	55	29	122	10	1	5	38	71	29	20	22	44	21	31
	16.0%	12.0%	18.0%	16.0%	16.0%	16.0%	29.0%	4.0%	17.0%	17.0%	17.0%	13.0%	17.0%	12.0%	19.0%	13.0%	18.0%
Spikes						E									mo		
	65	17	14	19	15	61	3	1	0	25	31	9	8	7	21	16	13
	7.0%	10.0%	7.0%	6.0%	9.0%	8.0%	9.0%	4.0%	-	11.0%	7.0%	4.0%	7.0%	4.0%	9.0%	10.0%	8.0%
RTU liquid without applicator		c								JK					M	M	
	52	15	4	19	14	45	5	1	1	22	22	8	1	6	22	10	13
	6.0%	9.0%	2.0%	6.0%	8.0%	6.0%	14.0%	4.0%	3.0%	10.0%	5.0%	4.0%	1.0%	3.0%	10.0%	6.0%	8.0%
Tablets		B		b	B		E			JK					LM	L	Lm
	38	12	9	12	5	35	3	0	0	19	10	9	2	5	10	13	8
	4.0%	7.0%	5.0%	4.0%	3.0%	4.0%	9.0%	-	-	8.0%	2.0%	4.0%	2.0%	3.0%	4.0%	8.0%	5.0%
Other		cd								Jk						LM	
	6	2	1	2	1	6	0	0	0	0	3	3	1	3	1	1	0
	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	-	-	-	-	1.0%	1.0%	1.0%	2.0%	0	1.0%	-
Don't know												i		p			
	37	11	6	15	5	32	1	2	2	6	23	8	2	10	12	8	5
	4.0%	7.0%	3.0%	4.0%	3.0%	4.0%	3.0%	7.0%	7.0%	3.0%	5.0%	4.0%	2.0%	6.0%	5.0%	5.0%	3.0%
Sigma		d												i			
	1124	213	249	431	231	1013	48	30	33	326	545	253	138	212	310	219	245
	129.0%	130.0%	128.0%	128.0%	131.0%	130.0%	137.0%	111.0%	114.0%	145.0%	127.0%	117.0%	114.0%	117.0%	136.0%	131.0%	142.0%
Proportions/Means: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing																	

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

RETAIL OUTLET

Home improvement centers are the most popular retail outlets among garden fertilizer purchasers, accounting for 36% of the responses. The percentage of respondents purchasing from home improvement centers is slightly higher in suburban areas, with 38%, while 34% of rural respondents report purchasing there. Discount and mass merchandise stores and lawn and garden centers rank second and third, with 26% and 19%, respectively. Home improvement centers increase in popularity as income levels increase.

PRODUCT USAGE

Garden fertilizer products are purchased for a number of applications around the home. Application to vegetables is listed by 58% of respondents, followed by shrubs with 48% and potted plants with 44%. In general, garden fertilizer products are used to treat two to three problems.

Table 3B-4. What Place are Each of the Following Purchased Most Often? "Garden Fertilizer"

	Region					Dwelling			Population density				Family income						
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +		
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P		
Base: Have Used 'Garden fertilizer' in Past Year	870	164	194	336	176	779	35*	27**	29**	225	428	217	121	181	228	167	173		
Home improvement center (e.g. Home Depot, Lowes)	315	54	65	140	56	291	6	9	9	80	162	73	34	59	81	78	63		
	36.0%	33.0%	34.0%	42.0%	32.0%	37.0%	17.0%	33.0%	31.0%	36.0%	38.0%	34.0%	28.0%	33.0%	36.0%	47.0%	36.0%		
Discount/mass merchandise store (e.g. Wal-Mart, Kmart)		abD					F											LMNp	
	227	38	52	92	45	195	11	11	10	55	97	75	43	66	54	27	37		
	26.0%	23.0%	27.0%	27.0%	26.0%	25.0%	31.0%	41.0%	34.0%	24.0%	23.0%	35.0%	36.0%	36.0%	24.0%	16.0%	21.0%		
Lawn and garden center/nursery	164	40	32	45	47	147	8	3	6	49	91	24	17	26	51	30	40		
	19.0%	24.0%	16.0%	13.0%	27.0%	19.0%	23.0%	11.0%	21.0%	22.0%	21.0%	11.0%	14.0%	14.0%	22.0%	18.0%	23.0%		
Hardware store (e.g. True Value)		bC					BC		K				K		lM				
	42	5	16	11	10	39	2	0	1	13	20	9	9	7	6	9	11		
	5.0%	3.0%	8.0%	3.0%	6.0%	5.0%	6.0%	-	3.0%	6.0%	5.0%	4.0%	7.0%	4.0%	3.0%	5.0%	6.0%		
Farm supply store		AC														N			
	38	8	11	12	7	32	3	1	2	5	12	21	4	9	12	7	6		
	4.0%	5.0%	6.0%	4.0%	4.0%	4.0%	9.0%	4.0%	7.0%	2.0%	3.0%	10.0%	3.0%	5.0%	5.0%	4.0%	3.0%		
Supermarket/grocery store		IJ																	
	29	6	9	10	4	27	1	1	0	8	19	2	4	4	8	5	8		
	3.0%	4.0%	5.0%	3.0%	2.0%	3.0%	3.0%	4.0%	-	4.0%	4.0%	1.0%	3.0%	2.0%	4.0%	3.0%	5.0%		
Warehouse/wholesale club									k										
	17	4	0	11	2	16	1	0	0	8	7	2	1	3	4	5	4		
	2.0%	2.0%	-	3.0%	1.0%	2.0%	3.0%	-	-	4.0%	2.0%	1.0%	1.0%	2.0%	2.0%	3.0%	2.0%		
Mail order/catalog		B					B		k										
	6	1	2	2	1	5	0	1	0	1	3	2	2	1	1	1	1		
	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	-	4.0%	-	0	1.0%	1.0%	2.0%	1.0%	0	1.0%	1.0%		
Other	9	3	2	2	2	8	1	0	0	3	4	2	1	1	3	3	1		
	1.0%	2.0%	1.0%	1.0%	1.0%	1.0%	3.0%	-	-	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	2.0%	1.0%		
Don't know	23	5	5	11	2	19	2	1	1	3	13	7	6	5	8	2	2		
	3.0%	3.0%	3.0%	3.0%	1.0%	2.0%	6.0%	4.0%	3.0%	1.0%	3.0%	3.0%	5.0%	3.0%	4.0%	1.0%	1.0%		
Sigma		oP																	
	870	164	194	336	176	779	35	27	29	225	428	217	121	181	228	167	173		
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%		

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

Table 3B-5: Which of the Following Types of Plants are you Using Garden Fertilizers on?

	Total	Region				Dwelling				Population density			Family income				
		Northeast	Midwest	South	West	One-family house	Two-family house	Three+-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used Garden Fertilizer in the Past Year	870	164	194	336	176	779	35*	27**	29**	225	428	217	121	181	228	167	173
Vegetable	503	87	129	187	100	458	12	14	19	122	225	156	73	110	122	102	96
	58.0%	53.0%	66.0%	56.0%	57.0%	59.0%	34.0%	52.0%	66.0%	54.0%	53.0%	72.0%	60.0%	61.0%	54.0%	61.0%	55.0%
			ACd			F						IJ					
Shrub	419	79	85	168	87	381	20	10	8	114	228	77	48	73	113	85	100
	48.0%	48.0%	44.0%	50.0%	49.0%	49.0%	57.0%	37.0%	28.0%	51.0%	53.0%	35.0%	40.0%	40.0%	50.0%	51.0%	58.0%
										K	K				Im	IM	LM
Potted plants	382	74	87	151	70	334	18	15	15	85	203	94	53	88	104	65	72
	44.0%	45.0%	45.0%	45.0%	40.0%	43.0%	51.0%	56.0%	52.0%	38.0%	47.0%	43.0%	44.0%	49.0%	46.0%	39.0%	42.0%
											I			o			
Tree	309	60	46	130	73	281	12	10	6	98	147	64	42	53	82	59	73
	36.0%	37.0%	24.0%	39.0%	41.0%	36.0%	34.0%	37.0%	21.0%	44.0%	34.0%	29.0%	35.0%	29.0%	36.0%	35.0%	42.0%
		B		B	B					JK							M
Other	23	7	4	6	6	22	0	0	1	6	11	6	2	6	8	3	4
	3.0%	4.0%	2.0%	2.0%	3.0%	3.0%	-	-	3.0%	3.0%	3.0%	3.0%	2.0%	3.0%	4.0%	2.0%	2.0%
Sigma	1636	307	351	642	336	1476	62	49	49	425	814	397	218	330	429	314	345
	188.0%	187.0%	181.0%	191.0%	191.0%	189.0%	177.0%	181.0%	169.0%	189.0%	190.0%	183.0%	180.0%	182.0%	188.0%	188.0%	199.0%

Proportions/Means: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

3C. HOUSEPLANT FERTILIZERS

OVERVIEW

Forty-six percent of the respondents report purchasing houseplant fertilizers in the past 12 months.

Table 3C.1: When was the Last Time you Bought Each of the Following Products? "Houseplant Fertilizer"

		Region				Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: All Respondents	1498	290	357	571	280	1328	55*	58*	57*	369	769	360	269	321	370	254	284
	689	136	146	277	130	606	29	29	25	177	331	181	95	140	167	133	154
Top 2 Box (Net)	46.0%	47.0%	41.0%	49.0%	46.0%	46.0%	53.0%	50.0%	44.0%	48.0%	43.0%	50.0%	35.0%	44.0%	45.0%	52.0%	54.0%
				B								J		L	L	LMN	LMN
	357	75	72	143	67	315	16	13	13	100	163	94	43	72	80	76	86
Less than 6 months ago	24.0%	26.0%	20.0%	25.0%	24.0%	24.0%	29.0%	22.0%	23.0%	27.0%	21.0%	26.0%	16.0%	22.0%	22.0%	30.0%	30.0%
		b		b						J		j		L	I	LMN	LMN
	332	61	74	134	63	291	13	16	12	77	168	87	52	68	87	57	68
6 months to 1 year ago	22.0%	21.0%	21.0%	23.0%	23.0%	22.0%	24.0%	28.0%	21.0%	21.0%	22.0%	24.0%	19.0%	21.0%	24.0%	22.0%	24.0%
	809	154	211	294	150	722	26	29	32	192	438	179	174	181	203	121	130
Bottom 2 Box (Net)	54.0%	53.0%	59.0%	51.0%	54.0%	54.0%	47.0%	50.0%	56.0%	52.0%	57.0%	50.0%	65.0%	56.0%	55.0%	48.0%	46.0%
			C								K		MNOP	OP	oP		
	298	50	79	112	57	271	14	4	9	67	157	74	50	76	69	45	58
More than 1 year ago	20.0%	17.0%	22.0%	20.0%	20.0%	20.0%	25.0%	7.0%	16.0%	18.0%	20.0%	21.0%	19.0%	24.0%	19.0%	18.0%	20.0%
						G	G							o			
	511	104	132	182	93	451	12	25	23	125	281	105	124	105	134	76	72
Do not use product	34.0%	36.0%	37.0%	32.0%	33.0%	34.0%	22.0%	43.0%	40.0%	34.0%	37.0%	29.0%	46.0%	33.0%	36.0%	30.0%	25.0%
						f		F	F		K		MNOP	P	P		
	1498	290	357	571	280	1328	55	58	57	369	769	360	269	321	370	254	284
Sigma	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base

GEOGRAPHIC REGION

Purchases of houseplant fertilizers are not significantly affected by region or income level. Overall, 34% of the analyzed respondents report that they do not use houseplant fertilizers.

FAMILY INCOME

Fifty-four percent of the income group above \$100,000 report purchasing houseplant fertilizers within the last year. In the income range between \$75,000 and \$100,000, 52% of the respondents report purchasing houseplant fertilizers, and between \$25,000 and \$50,000, 44% report purchase.

BRAND RECOLLECTION

Miracle-Gro remains the most frequently purchased houseplant fertilizer brand in 2016, accounting for 64% of the responses. Jobe's houseplant fertilizer ranks a distant second, accounting for approximately 9%. Green Light ranks third, with 6%. The purchase of Miracle-Gro occurs most in the rural areas (74%) and is lowest in urban areas (56%).

Table 3C-2. What Brand(s) of Houseplant Fertilizer did you Purchase? If Possible, Please Refer to the Container

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/ trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
Base: Have Used Houseplant Fertilizer in the Past Year	689	136	146	277	130	606	29**	29**	25**	177	331	181	95*	140	167	133	154
Miracle Gro	440	85	99	185	71	385	17	21	17	100	206	134	61	105	101	83	90
	64.0%	63.0%	68.0%	67.0%	55.0%	64.0%	59.0%	72.0%	68.0%	56.0%	62.0%	74.0%	64.0%	75.0%	60.0%	62.0%	58.0%
			D	D								IJ		INOP			
Jobe's	64	14	13	18	19	57	1	4	2	14	34	16	7	17	17	10	13
	9.0%	10.0%	9.0%	6.0%	15.0%	9.0%	3.0%	14.0%	8.0%	8.0%	10.0%	9.0%	7.0%	12.0%	10.0%	8.0%	8.0%
				C													
Green Light	43	6	5	20	12	39	2	1	1	17	21	5	3	5	16	5	14
	6.0%	4.0%	3.0%	7.0%	9.0%	6.0%	7.0%	3.0%	4.0%	10.0%	6.0%	3.0%	3.0%	4.0%	10.0%	4.0%	9.0%
				B						K	k				IMo		Imo
Earth Juice	40	14	5	13	8	35	3	2	0	11	26	3	3	5	12	10	10
	6.0%	10.0%	3.0%	5.0%	6.0%	6.0%	10.0%	7.0%	-	6.0%	8.0%	2.0%	3.0%	4.0%	7.0%	8.0%	6.0%
		BC								K	K						
Vigoro	39	7	6	18	8	37	1	1	0	16	16	7	5	1	13	10	10
	6.0%	5.0%	4.0%	6.0%	6.0%	6.0%	3.0%	3.0%	-	9.0%	5.0%	4.0%	5.0%	1.0%	8.0%	8.0%	6.0%
										JK			M		M	M	M
Schultz	37	6	7	14	10	35	2	0	0	10	20	7	4	5	10	9	9
	5.0%	4.0%	5.0%	5.0%	8.0%	6.0%	7.0%	-	-	6.0%	6.0%	4.0%	4.0%	4.0%	6.0%	7.0%	6.0%
Baby Bio	37	8	2	18	9	34	3	0	0	19	16	2	2	8	8	8	11
	5.0%	6.0%	1.0%	6.0%	7.0%	6.0%	10.0%	-	-	11.0%	5.0%	1.0%	2.0%	6.0%	5.0%	6.0%	7.0%
		B		B	B					JK	K						I
Dynamite	36	4	10	13	9	34	1	1	0	15	15	6	2	3	13	11	7
	5.0%	3.0%	7.0%	5.0%	7.0%	6.0%	3.0%	3.0%	-	8.0%	5.0%	3.0%	2.0%	2.0%	8.0%	8.0%	5.0%
										JK					IM	LM	
(Continued)																	

Table 3C-2: What Brand(s) of Houseplant Fertilizer did you Purchase? If Possible, Please Refer to the Container

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Easy Gardener	35	10	5	12	8	29	3	1	2	18	15	2	5	2	7	12	9
	5.0%	7.0%	3.0%	4.0%	6.0%	5.0%	10.0%	3.0%	8.0%	10.0%	5.0%	1.0%	5.0%	1.0%	4.0%	9.0%	6.0%
										JK	K		m			Mn	M
Bonide	35	10	1	12	12	30	4	1	0	17	14	4	2	3	13	9	8
	5.0%	7.0%	1.0%	4.0%	9.0%	5.0%	14.0%	3.0%	-	10.0%	4.0%	2.0%	2.0%	2.0%	8.0%	7.0%	5.0%
		B		B	Bc					JK					IM	m	
K Gro	24	4	2	13	5	20	1	2	1	8	15	1	3	2	7	6	6
	3.0%	3.0%	1.0%	5.0%	4.0%	3.0%	3.0%	7.0%	4.0%	5.0%	5.0%	1.0%	3.0%	1.0%	4.0%	5.0%	4.0%
				b						K	K						
Osmocote	23	2	3	12	6	21	0	1	1	8	9	6	2	5	8	4	4
	3.0%	1.0%	2.0%	4.0%	5.0%	3.0%	-	3.0%	4.0%	5.0%	3.0%	3.0%	2.0%	4.0%	5.0%	3.0%	3.0%
Hoffman	22	5	3	10	4	21	1	0	0	15	5	2	3	0	5	6	8
	3.0%	4.0%	2.0%	4.0%	3.0%	3.0%	3.0%	-	-	8.0%	2.0%	1.0%	3.0%	-	3.0%	5.0%	5.0%
										JK			M		M	M	M
Jack's Classics	22	5	3	9	5	19	1	2	0	12	10	0	2	1	7	6	6
	3.0%	4.0%	2.0%	3.0%	4.0%	3.0%	3.0%	7.0%	-	7.0%	3.0%	-	2.0%	1.0%	4.0%	5.0%	4.0%
										JK	K				m	M	m
Vitax	6	1	1	2	2	6	0	0	0	3	3	0	0	1	2	1	2
	1.0%	1.0%	1.0%	1.0%	2.0%	1.0%	-	-	-	2.0%	1.0%	-	-	1.0%	1.0%	1.0%	1.0%
										k							
Other	9	1	2	3	3	8	0	0	1	0	4	5	0	3	1	3	2
	1.0%	1.0%	1.0%	1.0%	2.0%	1.0%	-	-	4.0%	-	1.0%	3.0%	-	2.0%	1.0%	2.0%	1.0%
												I					
Don't know	45	9	18	14	4	37	1	2	5	5	28	12	11	4	14	7	9
	7.0%	7.0%	12.0%	5.0%	3.0%	6.0%	3.0%	7.0%	20.0%	3.0%	8.0%	7.0%	12.0%	3.0%	8.0%	5.0%	6.0%
			CD								I	i	Mo		M		
Sigma	957	191	185	386	195	847	41	39	30	288	457	212	115	170	254	200	218
	139.0%	140.0%	127.0%	139.0%	150.0%	140.0%	141.0%	134.0%	120.0%	163.0%	138.0%	117.0%	121.0%	121.0%	152.0%	150.0%	142.0%

Proportions/Means: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

PRODUCT FORM

Granular houseplant fertilizers account for 34% of the responses. Liquid concentrates, spikes, and water soluble powders all rank high with respondents with 26%, 23%, and 14% of responses, respectively. Granular product formulations are preferred about evenly across all regions. Liquid fertilizers are favored more by the respondents in the Northeast.

Table 3C-3: What Form was the Houseplant Fertilizer?

	Total	Region				Dwelling			Population density				Family income				
		Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used Houseplant Fertilizer in the Past Year	689	136	146	277	130	606	29**	29**	25**	177	331	181	95*	140	167	133	154
Granules	234	42	44	108	40	211	7	8	8	64	112	58	35	47	58	41	53
	34.0%	31.0%	30.0%	39.0%	31.0%	35.0%	24.0%	28.0%	32.0%	36.0%	34.0%	32.0%	37.0%	34.0%	35.0%	31.0%	34.0%
b																	
Liquid concentrate	177	39	35	67	36	159	7	7	4	48	83	46	20	33	38	38	48
	26.0%	29.0%	24.0%	24.0%	28.0%	26.0%	24.0%	24.0%	16.0%	27.0%	25.0%	25.0%	21.0%	24.0%	23.0%	29.0%	31.0%
In																	
Spikes	158	29	34	60	35	143	2	6	7	45	72	41	24	28	36	33	37
	23.0%	21.0%	23.0%	22.0%	27.0%	24.0%	7.0%	21.0%	28.0%	25.0%	22.0%	23.0%	25.0%	20.0%	22.0%	25.0%	24.0%
Water soluble powder	98	19	23	42	14	88	4	4	2	29	41	28	10	29	23	16	20
	14.0%	14.0%	16.0%	15.0%	11.0%	15.0%	14.0%	14.0%	8.0%	16.0%	12.0%	15.0%	11.0%	21.0%	14.0%	12.0%	13.0%
Lop																	
Ready to use (RTU) liquid with applicator	84	11	20	32	21	68	9	4	3	28	41	15	12	8	24	20	20
	12.0%	8.0%	14.0%	12.0%	16.0%	11.0%	31.0%	14.0%	12.0%	16.0%	12.0%	8.0%	13.0%	6.0%	14.0%	15.0%	13.0%
A																	
Tablets	84	22	14	31	17	74	4	3	3	37	35	12	10	11	25	16	22
	12.0%	16.0%	10.0%	11.0%	13.0%	12.0%	14.0%	10.0%	12.0%	21.0%	11.0%	7.0%	11.0%	8.0%	15.0%	12.0%	14.0%
b																	
JK																	
m																	
m																	
(Continued)																	

(Continued)

Table 3C.3: What Form was the Houseplant Fertilizer?

	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
RTU liquid without applicator	34	5	7	12	10	32	1	0	1	12	18	4	3	2	10	7	12
	5.0%	4.0%	5.0%	4.0%	8.0%	5.0%	3.0%	-	4.0%	7.0%	5.0%	2.0%	3.0%	1.0%	6.0%	5.0%	8.0%
										K	k				M	m	M
Other	4	0	0	2	2	3	0	0	1	1	2	1	0	1	3	0	0
	1.0%	-	-	1.0%	2.0%	0	-	-	4.0%	1.0%	1.0%	1.0%	-	1.0%	2.0%	-	-
															p		
Don't know	31	8	7	11	5	23	1	3	4	3	18	10	4	4	13	6	4
	4.0%	6.0%	5.0%	4.0%	4.0%	4.0%	3.0%	10.0%	16.0%	2.0%	5.0%	6.0%	4.0%	3.0%	8.0%	5.0%	3.0%
										l	i				mP		
Sigma	904	175	184	365	180	801	35	35	33	267	422	215	118	163	230	177	216
	131.0%	129.0%	126.0%	132.0%	138.0%	132.0%	121.0%	121.0%	132.0%	151.0%	127.0%	119.0%	124.0%	116.0%	138.0%	133.0%	140.0%
Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing																	

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

RETAIL OUTLET

Home improvement centers and discount or mass merchandise stores are reported as the key retail outlets for the purchase of houseplant fertilizers, accounting for 32% and 31% of the responses, respectively, in 2016. Lawn and garden centers rank third with 15% in 2016.

Income level affects where houseplant fertilizers are purchased, as those in the lower income levels tend to purchase at discount or mass-merchandise outlets, and the higher income levels are more likely to purchase at home improvement centers. Respondents in rural areas are most likely to purchase their houseplant fertilizers at the key outlets (home improvement centers and discount or mass merchandise stores) with 68% of responses, versus urban respondents with 60%.

Table 3C. 4: What Place are Each of the Following Purchased Most Often? "Houseplant Fertilizer"

	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used 'Houseplant fertilizer' in Past Year	689	136	146	277	130	606	29**	29**	25**	177	331	181	95*	140	167	133	154
Home improvement center (e.g. Home Depot, Lowes)	220	38	50	103	29	203	4	7	6	56	115	49	21	40	50	60	49
	32.0%	28.0%	34.0%	37.0%	22.0%	33.0%	14.0%	24.0%	24.0%	32.0%	35.0%	27.0%	22.0%	29.0%	30.0%	45.0%	32.0%
Discount/mass merchandise store (e.g. Wal-Mart, Kmart)			D	aD							k					LMNP	I
	215	38	45	86	46	182	10	13	10	50	91	74	39	59	44	30	43
	31.0%	28.0%	31.0%	31.0%	35.0%	30.0%	34.0%	45.0%	40.0%	28.0%	27.0%	41.0%	41.0%	42.0%	26.0%	23.0%	28.0%
Lawn and garden center/nursery												IJ	NOP	NOP			
	100	22	23	30	25	94	3	2	1	28	54	18	12	14	29	16	29
	15.0%	16.0%	16.0%	11.0%	19.0%	16.0%	10.0%	7.0%	4.0%	16.0%	16.0%	10.0%	13.0%	10.0%	17.0%	12.0%	19.0%
Supermarket/grocery store				C						k	K				m		M
	58	14	11	18	15	49	2	3	4	19	28	11	6	9	18	9	16
	8.0%	10.0%	8.0%	6.0%	12.0%	8.0%	7.0%	10.0%	16.0%	11.0%	8.0%	6.0%	6.0%	6.0%	11.0%	7.0%	10.0%
Hardware store (e.g. True Value)				c													
	31	8	9	11	3	30	0	0	1	6	17	8	6	5	6	6	8
	4.0%	6.0%	6.0%	4.0%	2.0%	5.0%	-	-	4.0%	3.0%	5.0%	4.0%	6.0%	4.0%	4.0%	5.0%	5.0%
Farm supply store																	
	22	2	3	11	6	16	4	1	1	5	8	9	3	2	7	6	4
	3.0%	1.0%	2.0%	4.0%	5.0%	3.0%	14.0%	3.0%	4.0%	3.0%	2.0%	5.0%	3.0%	1.0%	4.0%	5.0%	3.0%
Warehouse/wholesale club																	
	13	2	0	7	4	11	1	1	0	8	3	2	3	3	1	2	4
	2.0%	1.0%	-	3.0%	3.0%	2.0%	3.0%	3.0%	-	5.0%	1.0%	1.0%	3.0%	2.0%	1.0%	2.0%	3.0%
Mail order/catalog				b	B						Jk						
	4	3	0	1	0	2	1	1	0	1	3	0	0	2	1	1	0
	1.0%	2.0%	-	0	-	0	3.0%	3.0%	-	1.0%	1.0%	-	-	1.0%	1.0%	1.0%	-
Other		bcd															
	8	4	2	1	1	7	1	0	0	2	4	2	0	3	3	2	0
	1.0%	3.0%	1.0%	0	1.0%	1.0%	3.0%	-	-	1.0%	1.0%	1.0%	-	2.0%	2.0%	2.0%	-
Don't know		C												p	p		
	18	5	3	9	1	12	3	1	2	2	8	8	5	3	8	1	1
	3.0%	4.0%	2.0%	3.0%	1.0%	2.0%	10.0%	3.0%	8.0%	1.0%	2.0%	4.0%	5.0%	2.0%	5.0%	1.0%	1.0%
Sigma												i	OP		OP		
	689	136	146	277	130	606	29	29	25	177	331	181	95	140	167	133	154
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

4A. LAWN HERBICIDES

OVERVIEW

Overall, 59% of the respondents report purchasing lawn herbicides within the past 12 months. Twenty-five percent of respondents indicate that they did not use lawn herbicides in 2016.

Table 4A-1: When was the Last Time You Bought Each of the Following Products? *Lawn Herbicides (Weed Killer)

	Total	Region					Dwelling			Population density			Family income				
		Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: All Respondents	1,498	290	357	571	280	1,328	55*	58*	57*	369	769	360	269	321	370	254	284
	891	159	222	358	152	793	37	29	32	214	471	206	123	165	239	170	194
Top 2 Box (Net)	59.0%	55.0%	62.0%	63.0%	54.0%	60.0%	67.0%	50.0%	56.0%	58.0%	61.0%	57.0%	46.0%	51.0%	65.0%	67.0%	68.0%
			aD	AD			g								LM	LM	LM
	452	76	111	188	77	407	18	14	13	111	237	104	53	77	132	85	105
Less than 6 months ago	30.0%	26.0%	31.0%	33.0%	28.0%	31.0%	33.0%	24.0%	23.0%	30.0%	31.0%	29.0%	20.0%	24.0%	36.0%	33.0%	37.0%
			A												LM	LM	LM
	439	83	111	170	75	386	19	15	19	103	234	102	70	88	107	85	89
6 months to 1 year ago	29.0%	29.0%	31.0%	30.0%	27.0%	29.0%	35.0%	26.0%	33.0%	28.0%	30.0%	28.0%	26.0%	27.0%	29.0%	33.0%	31.0%
																I	
	607	131	135	213	128	535	18	29	25	155	298	154	146	156	131	84	90
Bottom 2 Box (Net)	41.0%	45.0%	38.0%	37.0%	46.0%	40.0%	33.0%	50.0%	44.0%	42.0%	39.0%	43.0%	54.0%	49.0%	35.0%	33.0%	32.0%
		bC			BC			f					NOP	NOP			
	232	42	47	93	50	215	6	3	8	49	120	63	34	63	58	39	38
More than 1 year ago	15.0%	14.0%	13.0%	16.0%	18.0%	16.0%	11.0%	5.0%	14.0%	13.0%	16.0%	18.0%	13.0%	20.0%	16.0%	15.0%	13.0%
						G								LP			
	375	89	88	120	78	320	12	26	17	106	178	91	112	93	73	45	52
Do not use product	25.0%	31.0%	25.0%	21.0%	28.0%	24.0%	22.0%	45.0%	30.0%	29.0%	23.0%	25.0%	42.0%	29.0%	20.0%	18.0%	18.0%
		bC			C			EF		J			MNOP	NOP			
	1498	290	357	571	280	1328	55	58	57	369	769	360	269	321	370	254	284
Sigma	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * Small base.

GEOGRAPHIC REGION

Lawn herbicide usage varies to some degree across the country, with respondents in the South reporting the highest incidence of usage at 63%, and the West citing the lowest usage at 54% within the past one year. The Midwest stands close to the South with usage at 62% and Northeast with 55% usage during the past one year.

POPULATION DENSITY

The propensity to use lawn herbicides is slightly higher in suburban areas, where 61% report using them, as compared with 58% and 57%, respectively, among urban and rural respondents.

FAMILY INCOME

Although respondents at all income levels purchase lawn herbicides, the incidence of purchase is highest in the over \$100,000 and between \$50,000 and \$75,000 income range, with 68% and 67% reporting purchasing respectively, and the lowest in the under \$25,000 income level with only 51%.

BRAND RECOLLECTION

Thirty percent of the respondents report purchasing Ortho Weed-B-Gon Max Plus Crabgrass lawn herbicide in 2016, with an additional 8% saying they purchased other Ortho Weed-B-Gon lawn herbicide, for a total of 38% purchasing an Ortho Weed-B-Gon lawn herbicide in 2016. There were some respondents that used both of the previously mentioned Ortho products. Ortho Weed-B-Gon was most often cited by respondents in the Midwest, with 35% reporting purchasing it. Bayer Advanced Weed Killer and Scotts Halts Crabgrass follow with 15% and 12%, respectively. Nine percent of the respondents report purchasing Scotts other products. Spectracide Weed Stop follows closely, with 8% of respondents reporting purchasing it in 2016.

Table 4A-2: What Brand(s) of Lawn Herbicides (Weed Killer) Did You Purchase? If Possible, Please Refer to the Container

	Region				Dwelling				Population density			Family income					
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/ trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
Base: Have Used Lawn herbicides (weed killer) in the Past Year	891	159	222	358	152	793	37*	29**	32*	214	471	206	123	165	239	170	194
Ortho Weed-B-Gon Max	266	41	78	112	35	239	11	7	9	58	142	66	38	44	78	52	54
	30.0%	26.0%	35.0%	31.0%	23.0%	30.0%	30.0%	24.0%	28.0%	27.0%	30.0%	32.0%	31.0%	27.0%	33.0%	31.0%	28.0%
			aD	d													
Bayer Advanced Weed Killer	136	17	32	58	29	122	5	4	5	42	65	29	14	19	38	29	36
	15.0%	11.0%	14.0%	16.0%	19.0%	15.0%	14.0%	14.0%	16.0%	20.0%	14.0%	14.0%	11.0%	12.0%	16.0%	17.0%	19.0%
			A				J				lm						
Scotts Halts Crabgrass	109	22	31	36	20	102	3	3	1	29	64	16	11	18	38	19	23
	12.0%	14.0%	14.0%	10.0%	13.0%	13.0%	8.0%	10.0%	3.0%	14.0%	14.0%	8.0%	9.0%	11.0%	16.0%	11.0%	12.0%
									k		K		I				
Scotts Other Product	83	13	19	34	17	71	3	5	4	23	45	15	8	17	26	12	20
	9.0%	8.0%	9.0%	9.0%	11.0%	9.0%	8.0%	17.0%	13.0%	11.0%	10.0%	7.0%	7.0%	10.0%	11.0%	7.0%	10.0%
Ortho Weed-B-Gon Other Product	75	14	20	28	13	67	4	1	3	20	35	20	11	21	11	14	18
	8.0%	9.0%	9.0%	8.0%	9.0%	8.0%	11.0%	3.0%	9.0%	9.0%	7.0%	10.0%	9.0%	13.0%	5.0%	8.0%	9.0%
			N														n
Spectracide Weed Stop	71	11	17	32	11	68	1	1	1	17	38	16	11	11	21	13	15
	8.0%	7.0%	8.0%	9.0%	7.0%	9.0%	3.0%	3.0%	3.0%	8.0%	8.0%	8.0%	9.0%	7.0%	9.0%	8.0%	8.0%
Bayer Advanced Lawn	57	10	16	22	9	52	3	2	0	19	34	4	3	8	20	10	16
	6.0%	6.0%	7.0%	6.0%	6.0%	7.0%	8.0%	7.0%	-	9.0%	7.0%	2.0%	2.0%	5.0%	8.0%	6.0%	8.0%
									K		K		L		L		
Preen Lawn	27	6	5	13	3	22	2	2	1	6	13	8	2	3	9	7	6
	3.0%	4.0%	2.0%	4.0%	2.0%	3.0%	5.0%	7.0%	3.0%	3.0%	3.0%	4.0%	2.0%	2.0%	4.0%	4.0%	3.0%

(Continued)

Table 4A.2: What Brand(s) of Lawn Herbicides (Weed Killers) Did You Purchase? If Possible, Please Refer to the Container

	Total	Region				Dwelling				Population density			Family income				
		Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Bayer Advanced Natria	27	4	6	10	7	23	3	0	1	16	11	0	2	1	10	4	10
	3.0%	3.0%	3.0%	3.0%	5.0%	3.0%	8.0%	-	3.0%	7.0%	2.0%	-	2.0%	1.0%	4.0%	2.0%	5.0%
							e			JK	K				M		M
Green Light Wipe-Out	26	5	4	12	5	22	2	1	1	12	9	5	6	4	6	6	4
	3.0%	3.0%	2.0%	3.0%	3.0%	3.0%	5.0%	3.0%	3.0%	6.0%	2.0%	2.0%	5.0%	2.0%	3.0%	4.0%	2.0%
										Jk							
Bonide Weed Beater	25	6	3	11	5	21	3	1	0	11	10	4	3	2	8	4	8
	3.0%	4.0%	1.0%	3.0%	3.0%	3.0%	8.0%	3.0%	-	5.0%	2.0%	2.0%	2.0%	1.0%	3.0%	2.0%	4.0%
							e			Jk							m
Pennington	24	2	4	11	7	22	2	0	0	10	11	3	1	3	10	5	5
	3.0%	1.0%	2.0%	3.0%	5.0%	3.0%	5.0%	-	-	5.0%	2.0%	1.0%	1.0%	2.0%	4.0%	3.0%	3.0%
					a					k					l		
Hi-Yield	23	3	4	13	3	20	2	1	0	6	13	4	2	2	6	5	8
	3.0%	2.0%	2.0%	4.0%	2.0%	3.0%	5.0%	3.0%	-	3.0%	3.0%	2.0%	2.0%	1.0%	3.0%	3.0%	4.0%
																	m
Green Light Crabgrass Preventer	23	5	3	10	5	22	1	0	0	12	8	3	1	5	9	3	5
	3.0%	3.0%	1.0%	3.0%	3.0%	3.0%	3.0%	-	-	6.0%	2.0%	1.0%	1.0%	3.0%	4.0%	2.0%	3.0%
										JK							
Bonide Other Product	22	5	2	11	4	20	2	0	0	13	9	0	1	1	5	8	7
	2.0%	3.0%	1.0%	3.0%	3.0%	3.0%	5.0%	-	-	6.0%	2.0%	-	1.0%	1.0%	2.0%	5.0%	4.0%
				b						JK	K					IM	m
Fortify	22	5	1	8	8	16	3	3	0	12	9	1	2	2	6	5	7
	2.0%	3.0%	0	2.0%	5.0%	2.0%	8.0%	10.0%	-	6.0%	2.0%	0	2.0%	1.0%	3.0%	3.0%	4.0%
		B		b	Bc		E			JK							
Lily Miller	21	4	2	8	7	18	2	0	1	6	13	2	1	3	4	3	10
	2.0%	3.0%	1.0%	2.0%	5.0%	2.0%	5.0%	-	3.0%	3.0%	3.0%	1.0%	1.0%	2.0%	2.0%	2.0%	5.0%
					B												LmNo

(Continued)

Table 4A-2: What Brand(s) of Lawn Herbicides (Weed Killers) Did You Purchase? If Possible, Please Refer to the Container

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Casoron Granules	20	4	6	5	5	18	2	0	0	8	10	2	2	1	6	3	8
	2.0%	3.0%	3.0%	1.0%	3.0%	2.0%	5.0%	-	-	4.0%	2.0%	1.0%	2.0%	1.0%	3.0%	2.0%	4.0%
Crab-E-Rad										k							M
	17	1	3	8	5	16	1	0	0	8	7	2	1	2	6	4	4
	2.0%	1.0%	1.0%	2.0%	3.0%	2.0%	3.0%	-	-	4.0%	1.0%	1.0%	1.0%	1.0%	3.0%	2.0%	2.0%
Enforcer Weed Shot					a					jk							
	16	3	4	5	4	14	2	0	0	6	7	3	0	1	6	6	3
	2.0%	2.0%	2.0%	1.0%	3.0%	2.0%	5.0%	-	-	3.0%	1.0%	1.0%	-	1.0%	3.0%	4.0%	2.0%
Image															l	Lm	
	16	4	3	7	2	14	1	1	0	8	7	1	0	1	8	3	4
	2.0%	3.0%	1.0%	2.0%	1.0%	2.0%	3.0%	3.0%	-	4.0%	1.0%	0	-	1.0%	3.0%	2.0%	2.0%
Speedzone Lawn Weed										jk					Lm		
	14	1	2	8	3	10	3	1	0	8	3	3	2	1	4	3	4
	2.0%	1.0%	1.0%	2.0%	2.0%	1.0%	8.0%	3.0%	-	4.0%	1.0%	1.0%	2.0%	1.0%	2.0%	2.0%	2.0%
Green Light Other Product						E				J							
	11	3	1	4	3	10	1	0	0	8	3	0	1	1	2	3	4
	1.0%	2.0%	0	1.0%	2.0%	1.0%	3.0%	-	-	4.0%	1.0%	-	1.0%	1.0%	1.0%	2.0%	2.0%
Trimec Lawn Weed Killer										JK							
	10	4	0	4	2	9	1	0	0	4	3	3	2	1	5	1	1
	1.0%	3.0%	-	1.0%	1.0%	1.0%	3.0%	-	-	2.0%	1.0%	1.0%	2.0%	1.0%	2.0%	1.0%	1.0%
Other		B			b												
	30	4	10	9	7	26	0	2	2	6	15	9	7	3	5	8	7
	3.0%	3.0%	5.0%	3.0%	5.0%	3.0%	-	7.0%	6.0%	3.0%	3.0%	4.0%	6.0%	2.0%	2.0%	5.0%	4.0%
Don't know													mn				
	122	25	28	50	19	104	8	3	7	21	66	35	25	22	28	22	25
	14.0%	16.0%	13.0%	14.0%	13.0%	13.0%	22.0%	10.0%	22.0%	10.0%	14.0%	17.0%	20.0%	13.0%	12.0%	13.0%	13.0%
Sigma																	
	1293	222	304	529	238	1148	71	38	36	389	650	254	157	197	375	252	312
	145.0%	140.0%	137.0%	148.0%	157.0%	145.0%	192.0%	131.0%	113.0%	182.0%	138.0%	123.0%	128.0%	119.0%	157.0%	148.0%	161.0%

Proportions/Means: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * Small base; ** Very small base (under 30) ineligible for sig testing.

PRODUCT FORM

Granules are the most purchased form of lawn herbicides, accounting for 29% of the responses in 2016. Granules are the popular form of lawn herbicides in the West and South. Liquid concentrates follow closely with 28% of the responses during the same year. Liquid concentrates ready-to-use herbicides with trigger spray follow liquid concentrates with 27% of responses.

Table 4A-3: What Form was the Lawn Herbicides (Weed Killer)?

		Region				Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used Lawn Herbicides (Weed Killer) in the Past Year	891	159	222	358	152	793	37*	29**	32*	214	471	206	123	165	239	170	194
Granules	255	35	59	106	55	223	11	7	14	74	126	55	31	46	74	48	56
	29.0%	22.0%	27.0%	30.0%	36.0%	28.0%	30.0%	24.0%	44.0%	35.0%	27.0%	27.0%	25.0%	28.0%	31.0%	28.0%	29.0%
Liquid concentrate	247	38	67	100	42	233	4	6	4	56	124	67	25	52	66	46	58
	28.0%	24.0%	30.0%	28.0%	28.0%	29.0%	11.0%	21.0%	13.0%	26.0%	26.0%	33.0%	20.0%	32.0%	28.0%	27.0%	30.0%
Ready-to-use (RTU) with trigger spray	242	42	61	101	38	211	13	6	12	59	129	54	38	34	71	53	46
	27.0%	26.0%	27.0%	28.0%	25.0%	27.0%	35.0%	21.0%	38.0%	28.0%	27.0%	26.0%	31.0%	21.0%	30.0%	31.0%	24.0%
Aerosol spray	120	30	25	43	22	102	6	5	7	35	68	17	11	24	28	23	34
	13.0%	19.0%	11.0%	12.0%	14.0%	13.0%	16.0%	17.0%	22.0%	16.0%	14.0%	8.0%	9.0%	15.0%	12.0%	14.0%	18.0%
RTU liquid with hose sprayer	91	14	22	39	16	80	7	2	2	27	46	18	13	9	25	24	20
	10.0%	9.0%	10.0%	11.0%	11.0%	10.0%	19.0%	7.0%	6.0%	13.0%	10.0%	9.0%	11.0%	5.0%	10.0%	14.0%	10.0%
Dust	69	11	15	35	8	62	4	1	2	22	31	16	15	8	17	11	18
	8.0%	7.0%	7.0%	10.0%	5.0%	8.0%	11.0%	3.0%	6.0%	10.0%	7.0%	8.0%	12.0%	5.0%	7.0%	6.0%	9.0%

(Continued)

Table 4A-3: What Form was the Lawn Herbicides (Weed Killer)?

	Total	Region				Dwelling				Population density			Family income				
		Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Water soluble powder	56	10	9	29	8	48	6	2	0	23	27	6	7	10	15	9	15
	6.0%	6.0%	4.0%	8.0%	5.0%	6.0%	16.0%	7.0%	-	11.0%	6.0%	3.0%	6.0%	6.0%	6.0%	5.0%	8.0%
			b				EH			JK							
Other	4	1	1	1	1	4	0	0	0	1	3	0	0	1	2	1	0
	0	1.0%	0	0	1.0%	1.0%	-	-	-	0	1.0%	-	-	1.0%	1.0%	1.0%	-
Don't know	40	10	7	16	7	30	3	4	3	8	23	9	8	5	9	8	10
	4.0%	6.0%	3.0%	4.0%	5.0%	4.0%	8.0%	14.0%	9.0%	4.0%	5.0%	4.0%	7.0%	3.0%	4.0%	5.0%	5.0%
Sigma	1124	191	266	470	197	993	54	33	44	305	577	242	148	189	307	223	257
	126.0%	120.0%	120.0%	131.0%	130.0%	125.0%	146.0%	114.0%	138.0%	143.0%	123.0%	117.0%	120.0%	115.0%	128.0%	131.0%	132.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * Small base. ** Very small base (under 30) ineligible for sig testing.

RETAIL OUTLET

Home improvement stores are the most frequently mentioned retail outlets for lawn herbicides, accounting for 45% of the responses. Discount or mass merchandise stores frequency of mentions stands at 26% in 2016, followed by lawn and garden centers with 10%. Responses for home improvement centers are approximately the same across all regions with a range from 41% to 47%. Forty-seven percent of urban respondents mention home improvement centers, compared with 46% for suburban and 41% for rural respondents. Rural respondents are most likely to purchase at discount or mass merchandise stores, with 34% purchasing there, as compared with 21% of urban respondents.

PRODUCT USAGE

Fifty-seven percent of the respondents said that they used lawn herbicides to get rid of dandelions. Crabgrass was another problem, and 57% of the respondents reported using lawn herbicides. Dandelions are most treated in the Midwest, with 71% of the respondents reporting purchase.

Table 4A-4: What Place are Each of the Following Purchased Most Often? "Lawn Herbicides (Weed Killer)"

	Region					Dwelling				Pop. Density			Family Income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used 'Lawn herbicides (Weed Killer)' in Past Year	891	159	222	358	152	793	37*	29**	32*	214	471	206	123	165	239	170	194
Home improvement center (e.g., Home Depot, Lowes)	402	63	99	166	74	369	16	7	10	101	217	84	42	62	108	93	97
	45.0%	40.0%	45.0%	46.0%	49.0%	47.0%	43.0%	24.0%	31.0%	47.0%	46.0%	41.0%	34.0%	38.0%	45.0%	55.0%	50.0%
	h														L	LMn	LM
Discount/mass merchandise store (e.g., Walmart, Kmart)	231	38	55	101	37	190	13	12	16	45	116	70	48	63	61	30	29
	26.0%	24.0%	25.0%	28.0%	24.0%	24.0%	35.0%	41.0%	50.0%	21.0%	25.0%	34.0%	39.0%	38.0%	26.0%	18.0%	15.0%
Lawn and garden center/nursery									E			IJ	NOP	NOP	oP		
	89	20	23	29	17	82	1	4	2	26	51	12	12	9	31	15	22
	10.0%	13.0%	10.0%	8.0%	11.0%	10.0%	3.0%	14.0%	6.0%	12.0%	11.0%	6.0%	10.0%	5.0%	13.0%	9.0%	11.0%
										K	K				M		M
Hardware store (e.g., True Value)	45	11	14	12	8	43	0	0	2	10	20	15	6	13	11	7	8
	5.0%	7.0%	6.0%	3.0%	5.0%	5.0%	-	-	6.0%	5.0%	4.0%	7.0%	5.0%	8.0%	5.0%	4.0%	4.0%
		c	c														
Farm supply store	38	9	15	10	4	33	2	2	1	10	15	13	5	3	8	12	10
	4.0%	6.0%	7.0%	3.0%	3.0%	4.0%	5.0%	7.0%	3.0%	5.0%	3.0%	6.0%	4.0%	2.0%	3.0%	7.0%	5.0%
			Cd									J				Mn	m
(Continued)																	

Table 4A-4: What Place are Each of the Following Purchased Most Often? "Lawn Herbicides (Weed Killer)"

	Region					Dwelling				Pop. Density			Family Income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Supermarket/grocery store	25	3	4	16	2	23	0	2	0	6	17	2	4	5	4	4	8
	3.0%	2.0%	2.0%	4.0%	1.0%	3.0%	-	7.0%	-	3.0%	4.0%	1.0%	3.0%	3.0%	2.0%	2.0%	4.0%
				bd							k						
Warehouse/wholesale club	17	7	3	4	3	15	2	0	0	6	10	1	0	2	3	4	8
	2.0%	4.0%	1.0%	1.0%	2.0%	2.0%	5.0%	-	-	3.0%	2.0%	0	-	1.0%	1.0%	2.0%	4.0%
			bc							k						l	Lmn
Mail order/catalog	7	2	0	1	4	6	1	0	0	3	3	1	1	3	3	0	0
	1.0%	1.0%	-	0	3.0%	1.0%	3.0%	-	-	1.0%	1.0%	0	1.0%	2.0%	1.0%	-	-
			b		BC									op			
Other	12	1	4	6	1	11	0	1	0	2	9	1	1	1	3	3	4
	1.0%	1.0%	2.0%	2.0%	1.0%	1.0%	-	3.0%	-	1.0%	2.0%	0	1.0%	1.0%	1.0%	2.0%	2.0%
Don't know	25	5	5	13	2	21	2	1	1	5	13	7	4	4	7	2	8
	3.0%	3.0%	2.0%	4.0%	1.0%	3.0%	5.0%	3.0%	3.0%	2.0%	3.0%	3.0%	3.0%	2.0%	3.0%	1.0%	4.0%
																	o
Sigma	891	159	222	358	152	793	37	29	32	214	471	206	123	165	239	170	194
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * Small base; ** Very small base (under 30) ineligible for sig testing.

PRODUCT USAGE

Table 4A-1: What Weeds or Plants were a Problem?																	
	Total	Region				Dwelling				Pop. Density			Family Income				
		Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used Lawn herbicides (Weed Killer) in the Past Year	891	159	222	358	152	793	37*	29**	32*	214	471	206	123	165	239	170	194
Dandelions	512	79	157	177	99	455	20	13	24	109	275	128	76	100	129	99	108
	57.0%	50.0%	71.0%	49.0%	65.0%	57.0%	54.0%	45.0%	75.0%	51.0%	58.0%	62.0%	62.0%	61.0%	54.0%	58.0%	56.0%
Crabgrass			AC		AC				Ef		I	I					
	508	92	134	201	81	462	14	16	16	111	275	122	63	95	145	100	105
	57.0%	58.0%	60.0%	56.0%	53.0%	58.0%	38.0%	55.0%	50.0%	52.0%	58.0%	59.0%	51.0%	58.0%	61.0%	59.0%	54.0%
						F									I		
Assorted broadleaf weeds	225	31	63	91	40	198	11	8	8	41	115	69	35	44	49	40	57
	25.0%	19.0%	28.0%	25.0%	26.0%	25.0%	30.0%	28.0%	25.0%	19.0%	24.0%	33.0%	28.0%	27.0%	21.0%	24.0%	29.0%
Assorted grasses			A									IJ	n				N
	167	31	47	62	27	141	10	7	9	48	76	43	31	34	42	23	37
	19.0%	19.0%	21.0%	17.0%	18.0%	18.0%	27.0%	24.0%	28.0%	22.0%	16.0%	21.0%	25.0%	21.0%	18.0%	14.0%	19.0%
										J			nO	o			
Chick weed	133	23	34	58	18	121	3	6	3	39	67	27	13	24	38	26	32
	15.0%	14.0%	15.0%	16.0%	12.0%	15.0%	8.0%	21.0%	9.0%	18.0%	14.0%	13.0%	11.0%	15.0%	16.0%	15.0%	16.0%
Thistles	133	14	39	55	25	116	5	6	6	26	67	40	15	27	38	30	23
	15.0%	9.0%	18.0%	15.0%	16.0%	15.0%	14.0%	21.0%	19.0%	12.0%	14.0%	19.0%	12.0%	16.0%	16.0%	18.0%	12.0%
Ivy vines			A	A	A							IJ					
	128	24	32	52	20	111	6	4	7	41	53	34	21	12	34	29	32
	14.0%	15.0%	14.0%	15.0%	13.0%	14.0%	16.0%	14.0%	22.0%	19.0%	11.0%	17.0%	17.0%	7.0%	14.0%	17.0%	16.0%
										J		J	M		M	M	M
Bermuda grass	128	13	15	68	32	117	5	2	4	31	69	28	19	20	33	28	28
	14.0%	8.0%	7.0%	19.0%	21.0%	15.0%	14.0%	7.0%	13.0%	14.0%	15.0%	14.0%	15.0%	12.0%	14.0%	16.0%	14.0%
				AB	AB												

(Continued)

Table 4A-5: What Weeds or Plants were a Problem?

	Total	Region				Dwelling				Pop. Density			Family Income				
		Northeast	Midwest	South	West	One-family house	Two-family house	Three+-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Onions	85	14	9	55	7	76	4	2	3	28	38	19	10	19	20	14	22
	10.0%	9.0%	4.0%	15.0%	5.0%	10.0%	11.0%	7.0%	9.0%	13.0%	8.0%	9.0%	8.0%	12.0%	8.0%	8.0%	11.0%
		b		ABD						J							
Assorted woody plants	51	6	14	24	7	45	2	2	2	17	16	18	10	9	15	7	10
	6.0%	4.0%	6.0%	7.0%	5.0%	6.0%	5.0%	7.0%	6.0%	8.0%	3.0%	9.0%	8.0%	5.0%	6.0%	4.0%	5.0%
										J		J					
Plantain	42	6	7	18	11	38	1	1	2	20	16	6	8	8	5	12	9
	5.0%	4.0%	3.0%	5.0%	7.0%	5.0%	3.0%	3.0%	6.0%	9.0%	3.0%	3.0%	7.0%	5.0%	2.0%	7.0%	5.0%
					b					JK			N			N	
Other	17	1	6	6	4	16	0	1	0	2	11	4	2	4	5	3	3
	2.0%	1.0%	3.0%	2.0%	3.0%	2.0%	-	3.0%	-	1.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Sigma	2129	334	557	867	371	1896	81	68	84	513	1078	538	303	396	553	411	466
	239.0%	210.0%	251.0%	242.0%	244.0%	239.0%	219.0%	234.0%	263.0%	240.0%	229.0%	261.0%	246.0%	240.0%	231.0%	242.0%	240.0%
Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * Small base. ** Very small base (under 30) ineligible for sig testing.																	

4B. GARDEN AND NONSELECTIVE HERBICIDES

OVERVIEW

Overall, 46% of the respondents report purchasing garden and/or nonselective herbicides in 2016. Thirty-seven percent of respondents report that they do not use these products.

Table 4B-1: When was the Last Time You Bought Each of the Following Products? *Garden and Nonselective Herbicides (Weed Killer)*

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Base: All Respondents	1498	290	357	571	280	1328	55*	58*	57*	369	769	360	269	321	370	254	284
	687	133	174	271	109	617	26	22	22	174	349	164	96	130	175	137	149
Top 2 Box (Net)	46.0%	46.0%	49.0%	47.0%	39.0%	46.0%	47.0%	38.0%	39.0%	47.0%	45.0%	46.0%	36.0%	40.0%	47.0%	54.0%	52.0%
	d	D	D												Lm	LM	LM
Less than 6 months ago	316	59	76	132	49	285	11	12	8	83	157	76	37	56	88	61	74
	21.0%	20.0%	21.0%	23.0%	18.0%	21.0%	20.0%	21.0%	14.0%	22.0%	20.0%	21.0%	14.0%	17.0%	24.0%	24.0%	26.0%
			d												LM	Lm	LM
6 months to 1 year ago	371	74	98	139	60	332	15	10	14	91	192	88	59	74	87	76	75
	25.0%	26.0%	27.0%	24.0%	21.0%	25.0%	27.0%	17.0%	25.0%	25.0%	25.0%	24.0%	22.0%	23.0%	24.0%	30.0%	26.0%
			d													Lmn	
Bottom 2 Box (Net)	811	157	183	300	171	711	29	36	35	195	420	196	173	191	195	117	135
	54.0%	54.0%	51.0%	53.0%	61.0%	54.0%	53.0%	62.0%	61.0%	53.0%	55.0%	54.0%	64.0%	60.0%	53.0%	46.0%	48.0%
					aBC								NOP	nOP			
More than 1 year ago	250	38	50	92	70	229	8	4	9	47	145	58	32	65	64	42	47
	17.0%	13.0%	14.0%	16.0%	25.0%	17.0%	15.0%	7.0%	16.0%	13.0%	19.0%	16.0%	12.0%	20.0%	17.0%	17.0%	17.0%
					ABC	G					I			L	I		
Do not use product	561	119	133	208	101	482	21	32	26	148	275	138	141	126	131	75	88
	37.0%	41.0%	37.0%	36.0%	36.0%	36.0%	38.0%	55.0%	46.0%	40.0%	36.0%	38.0%	52.0%	39.0%	35.0%	30.0%	31.0%
								Ef					MNOP	OP			
Sigma	1498	290	357	571	280	1328	55	58	57	369	769	360	269	321	370	254	284
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base

GEOGRAPHIC REGION

In 2016, the purchase incidence of garden and nonselective herbicides by respondents is consistent across the Northeast, Midwest, and South, with 46%, 49%, and 47%, respectively. However, purchase incidence in the West is on the lower end and stands at 39%.

POPULATION DENSITY AND INCOME LEVEL

Respondents in urban areas made slightly more purchases of garden and nonselective herbicides as compared to the respondents in rural and suburban areas. Higher income respondents purchased more of garden and nonselective herbicides as compared to lower income respondents. For example, those with incomes between \$75,000 and \$100,000 and above \$100,000 reported purchasing incidences of 54% and 52%, respectively, as compared to the lower income groups.

BRAND RECOLLECTION

Among respondents indicating a particular brand, 42% report purchasing Roundup products, including Roundup Weed & Grass, "Roundup other products," and Roundup Poison Ivy in 2016. Ortho Grass B-Gon ranks second with 11% of the respondents. "Scotts other products" and Bayer Advanced Brush Killer are each listed by 9% of respondents.

Table 4B-2: What Brands of Garden and Nonselective Herbicides (Weed Killer) Did You Purchase? If Possible, Please Refer to the Container.

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used Garden and non-selective herbicides (weed killer) in the Past Year	687	133	174	271	109	617	26**	22**	22**	174	349	164	96*	130	175	137	149
Roundup Weed & Grass	210	31	68	81	30	193	2	5	10	38	108	64	32	45	51	40	42
	31.0%	23.0%	39.0%	30.0%	28.0%	31.0%	8.0%	23.0%	45.0%	22.0%	31.0%	39.0%	33.0%	35.0%	29.0%	29.0%	28.0%
			ACD								I	Ij					
Ortho Grass-B-Gon	73	9	16	32	16	64	4	2	3	18	38	17	5	13	23	16	16
	11.0%	7.0%	9.0%	12.0%	15.0%	10.0%	15.0%	9.0%	14.0%	10.0%	11.0%	10.0%	5.0%	10.0%	13.0%	12.0%	11.0%
					A										L	I	
Scotts OTHER PRODUCT	64	15	21	19	9	54	2	4	4	16	36	12	10	8	22	14	10
	9.0%	11.0%	12.0%	7.0%	8.0%	9.0%	8.0%	18.0%	18.0%	9.0%	10.0%	7.0%	10.0%	6.0%	13.0%	10.0%	7.0%
			c												mp		
Bayer Advanced Brush Killer	62	12	11	29	10	57	1	3	1	25	25	12	8	8	23	9	14
	9.0%	9.0%	6.0%	11.0%	9.0%	9.0%	4.0%	14.0%	5.0%	14.0%	7.0%	7.0%	8.0%	6.0%	13.0%	7.0%	9.0%
										JK					Mo		
Bayer Advanced OTHER PRODUCT	46	11	11	15	9	40	4	0	2	15	24	7	8	6	11	8	13
	7.0%	8.0%	6.0%	6.0%	8.0%	6.0%	15.0%	-	9.0%	9.0%	7.0%	4.0%	8.0%	5.0%	6.0%	6.0%	9.0%
(Continued)																	

Table 4B-2. What Brand(s) of Garden and Nonselective Herbicides (Weed Killer) Did You Purchase? If Possible, Please Refer to the Container.

	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/ trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Spectracide Weed & Grass Killer	42	14	6	15	7	38	2	0	2	9	23	10	5	7	16	6	8
	6.0%	11.0%	3.0%	6.0%	6.0%	6.0%	8.0%	-	9.0%	5.0%	7.0%	6.0%	5.0%	5.0%	9.0%	4.0%	5.0%
	Bc																
Roundup OTHER PRODUCT	41	8	4	23	6	36	0	3	2	10	18	13	7	11	13	5	5
	6.0%	6.0%	2.0%	8.0%	6.0%	6.0%	-	14.0%	9.0%	6.0%	5.0%	8.0%	7.0%	8.0%	7.0%	4.0%	3.0%
	bBop																
Ortho OTHER PRODUCT	40	11	11	14	4	35	3	0	2	10	17	13	3	13	11	3	10
	6.0%	8.0%	6.0%	5.0%	4.0%	6.0%	12.0%	-	9.0%	6.0%	5.0%	8.0%	3.0%	10.0%	6.0%	2.0%	7.0%
	LOoo																
Preen Garden Weed Preventer	36	5	12	14	5	33	1	1	1	9	17	10	7	6	6	9	8
	5.0%	4.0%	7.0%	5.0%	5.0%	5.0%	4.0%	5.0%	5.0%	5.0%	5.0%	6.0%	7.0%	5.0%	3.0%	7.0%	5.0%
Easy Weeder	34	8	8	12	6	32	1	1	0	17	14	3	5	6	8	8	7
	5.0%	6.0%	5.0%	4.0%	6.0%	5.0%	4.0%	5.0%	-	10.0%	4.0%	2.0%	5.0%	5.0%	5.0%	6.0%	5.0%
	JK																
Roundup Poison Ivy	33	7	8	15	3	32	0	1	0	6	18	9	7	4	9	4	9
	5.0%	5.0%	5.0%	6.0%	3.0%	5.0%	-	5.0%	-	3.0%	5.0%	5.0%	7.0%	3.0%	5.0%	3.0%	6.0%
Garden Safe Weed & Grass Killer	31	8	4	14	5	27	4	0	0	10	16	5	4	5	8	6	8
	5.0%	6.0%	2.0%	5.0%	5.0%	4.0%	15.0%	-	-	6.0%	5.0%	3.0%	4.0%	4.0%	5.0%	4.0%	5.0%
	b																
EcoSmart Weed & Grass Killer	30	8	7	11	4	27	3	0	0	11	17	2	3	3	9	5	10
	4.0%	6.0%	4.0%	4.0%	4.0%	4.0%	12.0%	-	-	6.0%	5.0%	1.0%	3.0%	2.0%	5.0%	4.0%	7.0%
	KKm																
Bonide Grass Beater	29	6	5	15	3	27	2	0	0	14	14	1	0	5	10	6	8
	4.0%	5.0%	3.0%	6.0%	3.0%	4.0%	8.0%	-	-	8.0%	4.0%	1.0%	-	4.0%	6.0%	4.0%	5.0%
	jKL																
(Continued)																	

Table 4B-2. What Brand(s) of Garden and Nonselective Herbicides (Weed Killer) Did You Purchase? If Possible, Please Refer to the Container.

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
FertiLome	24	5	3	10	6	23	0	1	0	11	12	1	4	3	7	3	7
	3.0%	4.0%	2.0%	4.0%	6.0%	4.0%	-	5.0%	-	6.0%	3.0%	1.0%	4.0%	2.0%	4.0%	2.0%	5.0%
Ortho Ground Clear	22	3	4	10	5	19	0	0	3	6	7	9	6	3	6	4	3
	3.0%	2.0%	2.0%	4.0%	5.0%	3.0%	-	-	14.0%	3.0%	2.0%	5.0%	6.0%	2.0%	3.0%	3.0%	2.0%
Hi-Yield Killzall	20	4	2	10	4	18	1	1	0	8	8	4	2	2	8	1	7
	3.0%	3.0%	1.0%	4.0%	4.0%	3.0%	4.0%	5.0%	-	5.0%	2.0%	2.0%	2.0%	2.0%	5.0%	1.0%	5.0%
Bonide Brush Killer	18	4	3	7	4	17	1	0	0	10	7	1	0	1	4	6	7
	3.0%	3.0%	2.0%	3.0%	4.0%	3.0%	4.0%	-	-	6.0%	2.0%	1.0%	-	1.0%	2.0%	4.0%	5.0%
Enforcer Roots & All	16	3	2	6	5	11	4	1	0	4	10	2	1	3	3	6	3
	2.0%	2.0%	1.0%	2.0%	5.0%	2.0%	15.0%	5.0%	-	2.0%	3.0%	1.0%	1.0%	2.0%	2.0%	4.0%	2.0%
Preen Weed Preventer for Southern Gardens	16	4	3	8	1	15	1	0	0	3	8	5	2	7	2	3	2
	2.0%	3.0%	2.0%	3.0%	1.0%	2.0%	4.0%	-	-	2.0%	2.0%	3.0%	2.0%	5.0%	1.0%	2.0%	1.0%
Enforcer OTHER PRODUCT	16	4	5	3	4	12	3	1	0	7	6	3	0	1	6	5	4
	2.0%	3.0%	3.0%	1.0%	4.0%	2.0%	12.0%	5.0%	-	4.0%	2.0%	2.0%	-	1.0%	3.0%	4.0%	3.0%
Gordon's Pronto	16	6	1	7	2	15	1	0	0	5	10	1	0	3	5	4	4
	2.0%	5.0%	1.0%	3.0%	2.0%	2.0%	4.0%	-	-	3.0%	3.0%	1.0%	-	2.0%	3.0%	3.0%	3.0%
Finale	15	5	2	5	3	15	0	0	0	4	11	0	2	1	5	2	5
	2.0%	4.0%	1.0%	2.0%	3.0%	2.0%	-	-	-	2.0%	3.0%	-	2.0%	1.0%	3.0%	1.0%	3.0%

(Continued)

Table 4B-2: What Brand(s) of Garden and Nonselective Herbicides (Weed Killer) Did You Purchase? If Possible, Please Refer to the Container.

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Eliminator Weed & Grass Killer	15	1	2	5	7	11	3	0	1	4	6	5	5	2	4	0	4
	2.0%	1.0%	1.0%	2.0%	6.0%	2.0%	12.0%	-	5.0%	2.0%	2.0%	3.0%	5.0%	2.0%	2.0%	-	3.0%
					ABC								0		o		o
Image	14	4	4	2	4	13	1	0	0	5	8	1	0	2	6	2	4
	2.0%	3.0%	2.0%	1.0%	4.0%	2.0%	4.0%	-	-	3.0%	2.0%	1.0%	-	2.0%	3.0%	1.0%	3.0%
		c			C										l		
Green Light Amaze	14	4	0	7	3	12	1	0	1	6	7	1	1	1	5	6	1
	2.0%	3.0%	-	3.0%	3.0%	2.0%	4.0%	-	5.0%	3.0%	2.0%	1.0%	1.0%	1.0%	3.0%	4.0%	1.0%
		B		B	B					k						mP	
Bonide Kleenup	13	2	2	4	5	11	1	0	1	7	6	0	2	1	3	6	1
	2.0%	2.0%	1.0%	1.0%	5.0%	2.0%	4.0%	-	5.0%	4.0%	2.0%	-	2.0%	1.0%	2.0%	4.0%	1.0%
					bc					K	k					mP	
Lilly Miller OTHER PRODUCT	10	2	1	4	3	8	1	0	1	6	4	0	1	0	4	3	2
	1.0%	2.0%	1.0%	1.0%	3.0%	1.0%	4.0%	-	5.0%	3.0%	1.0%	-	1.0%	-	2.0%	2.0%	1.0%
										JK					m	m	
Gordon's Brush-No-More	10	4	1	3	2	9	1	0	0	6	4	0	0	0	7	1	2
	1.0%	3.0%	1.0%	1.0%	2.0%	1.0%	4.0%	-	-	3.0%	1.0%	-	-	-	4.0%	1.0%	1.0%
		b								JK					LMO		
Lilly Miller Noxall	5	1	1	1	2	3	1	1	0	2	3	0	1	0	2	0	2
	1.0%	1.0%	1.0%	0	2.0%	0	4.0%	5.0%	-	1.0%	1.0%	-	1.0%	-	1.0%	-	1.0%
Weed Impede	4	0	0	2	2	4	0	0	0	3	1	0	1	0	1	0	2
	1.0%	-	-	1.0%	2.0%	1.0%	-	-	-	2.0%	0	-	1.0%	-	1.0%	-	1.0%
					b					jk							
Other	12	0	5	5	2	10	0	1	1	2	4	6	3	1	2	2	4
	2.0%	-	3.0%	2.0%	2.0%	2.0%	-	5.0%	5.0%	1.0%	1.0%	4.0%	3.0%	1.0%	1.0%	1.0%	3.0%
			A									j					

(Continued)

Table 4B-2. What Brand(s) of Garden and Nonselective Herbicides (Weed Killer) Did You Purchase? If Possible, Please Refer to the Container.

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Don't know	66	16	18	22	10	60	2	2	2	13	32	21	10	14	17	13	12
	10.0%	12.0%	10.0%	8.0%	9.0%	10.0%	8.0%	9.0%	9.0%	7.0%	9.0%	13.0%	10.0%	11.0%	10.0%	9.0%	8.0%
Sigma	1097	225	251	430	191	981	51	28	37	320	539	238	145	185	317	206	244
	160.0%	169.0%	144.0%	159.0%	175.0%	159.0%	196.0%	127.0%	168.0%	184.0%	154.0%	145.0%	151.0%	142.0%	181.0%	150.0%	164.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

PRODUCT FORM

Garden and nonselective herbicides are most commonly purchased as liquid concentrates and ready-to-use liquid with applicator, each accounting for 32% of the responses. Respondents who purchase liquid concentrate and ready-to-use liquid products are most likely to be in the West, which has a combined purchase incidence of 71%, and least likely to be in the Midwest, which has a combined 59% for these formulations.

Table 4B-3: What Form was the Garden and Nonselective Herbicides?																	
	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used Garden and non-selective herbicides (weed killer) in the Past Year	687	133	174	271	109	617	26**	22**	22**	174	349	164	96*	130	175	137	149
Liquid concentrate	222	43	50	90	39	209	2	5	6	50	109	63	29	42	57	41	53
	32.0%	32.0%	29.0%	33.0%	36.0%	34.0%	8.0%	23.0%	27.0%	29.0%	31.0%	38.0%	30.0%	32.0%	33.0%	30.0%	36.0%
Ready-to-use (RTU) liquid with applicator	222	40	53	91	38	195	12	7	8	59	112	51	32	41	55	46	48
	32.0%	30.0%	30.0%	34.0%	35.0%	32.0%	46.0%	32.0%	36.0%	34.0%	32.0%	31.0%	33.0%	32.0%	31.0%	34.0%	32.0%
Granules	156	27	31	68	30	136	11	3	6	53	70	33	19	29	43	36	29
	23.0%	20.0%	18.0%	25.0%	28.0%	22.0%	42.0%	14.0%	27.0%	30.0%	20.0%	20.0%	20.0%	22.0%	25.0%	26.0%	19.0%
Aerosol Spray	102	16	30	41	15	85	7	5	5	33	56	13	10	19	29	22	22
	15.0%	12.0%	17.0%	15.0%	14.0%	14.0%	27.0%	23.0%	23.0%	19.0%	16.0%	8.0%	10.0%	15.0%	17.0%	16.0%	15.0%
Dust	70	15	20	26	9	61	3	3	3	29	30	11	15	7	19	12	17
	10.0%	11.0%	11.0%	10.0%	8.0%	10.0%	12.0%	14.0%	14.0%	17.0%	9.0%	7.0%	16.0%	5.0%	11.0%	9.0%	11.0%
RTU liquid without applicator	37	5	8	19	5	35	1	0	1	14	18	5	1	1	10	13	12
	5.0%	4.0%	5.0%	7.0%	5.0%	6.0%	4.0%	-	5.0%	8.0%	5.0%	3.0%	1.0%	1.0%	6.0%	9.0%	8.0%
Water soluble powder	36	5	12	15	4	32	2	1	1	16	15	5	7	5	9	4	11
	5.0%	4.0%	7.0%	6.0%	4.0%	5.0%	8.0%	5.0%	5.0%	9.0%	4.0%	3.0%	7.0%	4.0%	5.0%	3.0%	7.0%
Other	2	0	2	0	0	1	0	0	1	0	0	2	1	1	0	0	0
	0	-	1.0%	-	-	0	-	-	5.0%	-	-	1.0%	1.0%	1.0%	-	-	-
Don't know	37	8	10	13	6	31	2	3	1	7	21	9	6	5	9	5	12
	5.0%	6.0%	6.0%	5.0%	6.0%	5.0%	8.0%	14.0%	5.0%	4.0%	6.0%	5.0%	6.0%	4.0%	5.0%	4.0%	8.0%
Sigma	884	159	216	363	146	785	40	27	32	261	431	192	120	150	231	179	204
	129.0%	120.0%	124.0%	134.0%	134.0%	127.0%	154.0%	123.0%	145.0%	150.0%	123.0%	117.0%	125.0%	115.0%	132.0%	131.0%	137.0%
Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing																	

RETAIL OUTLET

Thirty-nine percent of the respondents' report purchasing their garden and nonselective herbicide products at home improvement centers. Respondents in the Midwest are more likely to purchase their garden and nonselective herbicides at home improvement centers than in other regions. Twenty-seven percent of the respondents' report purchasing garden and nonselective herbicides from discount/mass merchandise stores in 2016. Urban and suburban respondents are more likely to purchase garden and nonselective herbicides from home improvement centers, while rural respondents are more frequent purchasers of garden and nonselective herbicides from discount/mass merchandise stores.

Lawn and garden centers purchases account for 10% of the responses in 2016, followed by hardware stores and farm supply stores with 9% and 4%, respectively. With regard to purchases of garden and nonselective herbicide products in hardware stores, respondents in urban areas make more than suburban dwellers.

PRODUCT USAGE

Crabgrass and dandelions are identified most frequently as the weeds treated with garden/nonselective herbicides, accounting for 53% and 51% of the responses, respectively. Dandelions are more prevalent in the Midwest and least in the South. Respondents often are treating for more than one problem when using a garden/nonselective herbicide.

Table 4B-4: What Place are each of the Following Purchased Most Often? "Garden and Nonselective Herbicides (Weed Killer)"

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used 'Garden and non-selective herbicides (weed killer)' in Past Year	687	133	174	271	109	617	26**	22**	22**	174	349	164	96*	130	175	137	149
Home improvement center (e.g. Home Depot, Lowes)	268	52	73	106	37	251	6	4	7	69	140	59	23	41	69	71	64
	39.0%	39.0%	42.0%	39.0%	34.0%	41.0%	23.0%	18.0%	32.0%	40.0%	40.0%	36.0%	24.0%	32.0%	39.0%	52.0%	43.0%
Discount/mass merchandise store (e.g. Wal-Mart, Kmart)	186	31	49	73	33	159	7	11	9	38	88	60	42	52	41	20	31
	27.0%	23.0%	28.0%	27.0%	30.0%	26.0%	27.0%	50.0%	41.0%	22.0%	25.0%	37.0%	44.0%	40.0%	23.0%	15.0%	21.0%
Lawn and garden center/nursery	70	17	16	24	13	64	3	2	1	17	43	10	11	4	25	10	20
	10.0%	13.0%	9.0%	9.0%	12.0%	10.0%	12.0%	9.0%	5.0%	10.0%	12.0%	6.0%	11.0%	3.0%	14.0%	7.0%	13.0%
Hardware store (e.g. True Value)	63	12	12	23	16	57	5	0	1	25	25	13	6	15	15	14	13
	9.0%	9.0%	7.0%	8.0%	15.0%	9.0%	19.0%	-	5.0%	14.0%	7.0%	8.0%	6.0%	12.0%	9.0%	10.0%	9.0%
Farm supply store	25	7	5	8	5	23	1	0	1	4	12	9	5	2	7	6	5
	4.0%	5.0%	3.0%	3.0%	5.0%	4.0%	4.0%	-	5.0%	2.0%	3.0%	5.0%	5.0%	2.0%	4.0%	4.0%	3.0%
Supermarket/grocery store	23	3	7	11	2	19	1	2	1	8	11	4	4	5	3	6	5
	3.0%	2.0%	4.0%	4.0%	2.0%	3.0%	4.0%	9.0%	5.0%	5.0%	3.0%	2.0%	4.0%	4.0%	2.0%	4.0%	3.0%
Warehouse/wholesale club	13	3	1	9	0	10	1	1	1	3	9	1	2	3	3	3	2
	2.0%	2.0%	1.0%	3.0%	-	2.0%	4.0%	5.0%	5.0%	2.0%	3.0%	1.0%	2.0%	2.0%	2.0%	2.0%	1.0%
Mail order/catalog	7	3	1	2	1	7	0	0	0	2	5	0	0	0	2	2	3
	1.0%	2.0%	1.0%	1.0%	1.0%	1.0%	-	-	-	1.0%	1.0%	-	-	-	1.0%	1.0%	2.0%
Other	7	1	3	3	0	7	0	0	0	1	4	2	0	2	1	3	1
	1.0%	1.0%	2.0%	1.0%	-	1.0%	-	-	-	1.0%	1.0%	1.0%	-	2.0%	1.0%	2.0%	1.0%
Don't know	25	4	7	12	2	20	2	2	1	7	12	6	3	6	9	2	5
	4.0%	3.0%	4.0%	4.0%	2.0%	3.0%	8.0%	9.0%	5.0%	4.0%	3.0%	4.0%	3.0%	5.0%	5.0%	1.0%	3.0%
Sigma	687	133	174	271	109	617	26	22	22	174	349	164	96	130	175	137	149
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

Table 4B-5. What Weeds or Plants were a Problem?

	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used Garden and non-selective herbicides (weed killer) in the Past Year	687	133	174	271	109	617	26**	22**	22**	174	349	164	96*	130	175	137	149
Crabgrass	364 53.0%	66 50.0%	95 55.0%	154 57.0%	49 45.0%	333 54.0%	10 38.0%	11 50.0%	10 45.0%	94 54.0%	181 52.0%	89 54.0%	44 46.0%	68 52.0%	97 55.0%	75 55.0%	80 54.0%
Dandelions	350 51.0%	64 48.0%	113 65.0%	115 42.0%	58 53.0%	314 51.0%	9 35.0%	12 55.0%	15 68.0%	79 45.0%	180 52.0%	91 55.0%	48 50.0%	70 54.0%	92 53.0%	69 50.0%	71 48.0%
Assorted broadleaf weeds	166 24.0%	29 22.0%	46 26.0%	55 20.0%	36 33.0%	146 24.0%	5 19.0%	7 32.0%	8 36.0%	37 21.0%	77 22.0%	52 32.0%	22 23.0%	42 32.0%	36 21.0%	30 22.0%	36 24.0%
Assorted grasses	145 21.0%	25 19.0%	37 21.0%	60 22.0%	23 21.0%	126 20.0%	6 23.0%	7 32.0%	6 27.0%	37 21.0%	71 20.0%	37 23.0%	28 29.0%	32 25.0%	25 14.0%	24 18.0%	36 24.0%
Ivy vines	129 19.0%	30 23.0%	30 17.0%	54 20.0%	15 14.0%	116 19.0%	4 15.0%	5 23.0%	4 18.0%	28 16.0%	59 17.0%	42 26.0%	21 22.0%	29 22.0%	30 17.0%	30 22.0%	19 13.0%
Chick weed	111 16.0%	19 14.0%	25 14.0%	48 18.0%	19 17.0%	102 17.0%	3 12.0%	4 18.0%	2 9.0%	38 22.0%	48 14.0%	25 15.0%	14 15.0%	17 13.0%	31 18.0%	25 18.0%	24 16.0%
Bermuda grass	106 15.0%	10 8.0%	18 10.0%	54 20.0%	24 22.0%	97 16.0%	4 15.0%	2 9.0%	3 14.0%	24 14.0%	59 17.0%	23 14.0%	14 15.0%	20 15.0%	26 15.0%	25 18.0%	21 14.0%
Thistles	98 14.0%	13 10.0%	28 16.0%	40 15.0%	17 16.0%	87 14.0%	1 4.0%	4 18.0%	6 27.0%	14 8.0%	51 15.0%	33 20.0%	16 17.0%	21 16.0%	25 14.0%	24 18.0%	12 8.0%
Brush	83 12.0%	15 11.0%	16 9.0%	40 15.0%	12 11.0%	75 12.0%	3 12.0%	2 9.0%	3 14.0%	28 16.0%	36 10.0%	19 12.0%	15 16.0%	13 10.0%	24 14.0%	14 10.0%	17 11.0%
Onions	63 9.0%	9 7.0%	12 7.0%	37 14.0%	5 5.0%	60 10.0%	1 4.0%	0 -	2 9.0%	19 11.0%	29 8.0%	15 9.0%	7 7.0%	13 10.0%	15 9.0%	14 10.0%	14 9.0%
Plantain	36 5.0%	6 5.0%	6 3.0%	14 5.0%	10 9.0%	29 5.0%	3 12.0%	2 9.0%	2 9.0%	14 8.0%	12 3.0%	10 6.0%	6 6.0%	10 8.0%	7 4.0%	9 7.0%	4 3.0%
Assorted woody plants	32 5.0%	5 4.0%	7 4.0%	15 6.0%	5 5.0%	29 5.0%	2 8.0%	0 -	1 5.0%	11 6.0%	8 2.0%	13 8.0%	5 5.0%	9 7.0%	6 3.0%	6 4.0%	6 4.0%
Other	12 2.0%	1 1.0%	4 2.0%	4 1.0%	3 3.0%	12 2.0%	0 -	0 -	0 -	0 -	7 2.0%	5 3.0%	1 1.0%	2 2.0%	4 2.0%	2 1.0%	3 2.0%
Sigma	1695 247.0%	292 220.0%	437 251.0%	690 255.0%	276 253.0%	1526 247.0%	51 196.0%	56 255.0%	62 282.0%	423 243.0%	818 234.0%	454 277.0%	241 251.0%	346 266.0%	418 239.0%	347 253.0%	343 230.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

5A. LAWN AND GARDEN INSECTICIDES

OVERVIEW

Forty percent of the respondents report purchasing lawn and garden insecticide products during the 2016 season. Conversely, 41% of respondents indicate that they do not use lawn and garden insecticides.

Table 5A-1: When was the Last Time you Bought Each of the Following Products? *Lawn or Garden Insecticides*																	
	Total	Region				Dwelling				Population density			Family income				
		Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: All Respondents	1498	290	357	571	280	1328	55*	58*	57*	369	769	360	269	321	370	254	284
Top 2 Box (Net)	600	99	136	265	100	544	24	16	16	159	298	143	89	116	157	116	122
	40.0%	34.0%	38.0%	46.0%	36.0%	41.0%	44.0%	28.0%	28.0%	43.0%	39.0%	40.0%	33.0%	36.0%	42.0%	46.0%	43.0%
Less than 6 months ago				ABD		Gh	gh								Lm	LM	Lm
	283	48	52	126	57	255	10	9	9	77	145	61	39	49	78	59	58
	19.0%	17.0%	15.0%	22.0%	20.0%	19.0%	18.0%	16.0%	16.0%	21.0%	19.0%	17.0%	14.0%	15.0%	21.0%	23.0%	20.0%
6 months to 1 year ago				aB	b										LM	LM	lm
	317	51	84	139	43	289	14	7	7	82	153	82	50	67	79	57	64
	21.0%	18.0%	24.0%	24.0%	15.0%	22.0%	25.0%	12.0%	12.0%	22.0%	20.0%	23.0%	19.0%	21.0%	21.0%	22.0%	23.0%
Bottom 2 Box (Net)			aD	AD		gh	gh										
	898	191	221	306	180	784	31	42	41	210	471	217	180	205	213	138	162
	60.0%	66.0%	62.0%	54.0%	64.0%	59.0%	56.0%	72.0%	72.0%	57.0%	61.0%	60.0%	67.0%	64.0%	58.0%	54.0%	57.0%
More than 1 year ago		C	C		C			Ef	ef				NOP	nOp			
	283	58	58	102	65	248	12	6	17	59	156	68	39	52	75	55	62
	19.0%	20.0%	16.0%	18.0%	23.0%	19.0%	22.0%	10.0%	30.0%	16.0%	20.0%	19.0%	14.0%	16.0%	20.0%	22.0%	22.0%
Do not use product					Bc				EG		i				I	Lm	Lm
	615	133	163	204	115	536	19	36	24	151	315	149	141	153	138	83	100
	41.0%	46.0%	46.0%	36.0%	41.0%	40.0%	35.0%	62.0%	42.0%	41.0%	41.0%	41.0%	52.0%	48.0%	37.0%	33.0%	35.0%
Sigma		C	C					EFH					NOP	NOP			
	1498	290	357	571	280	1328	55	58	57	369	769	360	269	321	370	254	284
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Proportions/Means: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base																	

GEOGRAPHIC REGION

The purchase incidence of lawn and garden insecticides is highest in the South, with 46%, and lowest in the Northeast, with 34%. This variance is a reflection of differences in climate and insect problems.

POPULATION DENSITY

Lawn and garden insecticide purchase incidence is slightly higher among urban respondents, with 43% reporting use, as compared with 40% in rural and 39% in suburban areas.

FAMILY INCOME

Among respondents in 2016, the propensity to purchase lawn and garden insecticides is not significantly affected by income, although there is only a slight difference, with the lowest income level having a purchase incidence of 33% and the highest two income levels (above \$100,000 and between \$75,000 and \$100,000) having a purchase incidence of 43% and 46%, respectively.

BRAND RECOLLECTION

Ortho is one of the frequently purchased brands of lawn and garden insecticide in 2016, with all of its sub-brands accounting for 36% of the responses. Ortho responses are broken down as follows: 19% for Ortho Bug-B-Gon, 7% for Ortho Ant-B-Gon, 6% for Ortho Fire Ant Killer, 2% for Ortho Bug Geta, and 2% for Ortho Orthene Fire Ant Killer. Ortho is purchased fairly evenly across all regions and by all income levels. Brand recollection of other brands of lawn and garden insecticides includes Bayer (all products combined) with 41% of responses, and Spectracide (all products combined) with 18%. Individually, after Ortho Bug-B-Gon, Raid House & Garden Bug Killer (11%) and Scotts Grubex (10%) had the greatest number of responses.

PRODUCT FORM

Granular products are the most commonly purchased forms of lawn and garden insecticides in 2016, accounting for 27% of the responses, followed closely by ready-to-use RTUs with trigger sprayers with 25%. Liquid concentrates are the product form of choice for 23% of respondents. Of those who purchased granular product, respondents from the South had the greatest propensity to purchase them (32%), while ready-to-use RTUs are purchased most often in the West. Of those that used granular products, the highest purchase incidence is for respondents with incomes between \$75,000 and \$100,000.

Table 5A-2: What Brand(s) of Lawn or Garden Insecticides Did you Purchase? If Possible, Please Refer to the Container

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used Lawn or Garden Insecticides in the Past Year	600	99*	136	265	100	544	24**	16**	16**	159	298	143	89*	116	157	116	122
Ortho Bug-B-Gon	116	18	31	49	18	104	3	5	4	29	57	30	20	15	32	28	21
	19.0%	18.0%	23.0%	18.0%	18.0%	19.0%	13.0%	31.0%	25.0%	18.0%	19.0%	21.0%	22.0%	13.0%	20.0%	24.0%	17.0%
													m			M	
Raid House & Garden Bug Killer	63	10	18	23	12	58	2	1	2	10	35	18	8	11	19	11	14
	11.0%	10.0%	13.0%	9.0%	12.0%	11.0%	8.0%	6.0%	13.0%	6.0%	12.0%	13.0%	9.0%	9.0%	12.0%	9.0%	11.0%
											i	i					
Scotts Grubex	59	21	14	20	4	49	5	3	2	16	32	11	8	11	18	13	9
	10.0%	21.0%	10.0%	8.0%	4.0%	9.0%	21.0%	19.0%	13.0%	10.0%	11.0%	8.0%	9.0%	9.0%	11.0%	11.0%	7.0%
		BCD	d														
Amdro Fire Ant	56	3	6	40	7	52	3	1	0	19	26	11	8	14	16	9	9
	9.0%	3.0%	4.0%	15.0%	7.0%	10.0%	13.0%	6.0%	-	12.0%	9.0%	8.0%	9.0%	12.0%	10.0%	8.0%	7.0%
				ABD													
Bayer Advanced Complete	55	6	14	26	9	52	1	0	2	18	29	8	4	9	16	10	16
	9.0%	6.0%	10.0%	10.0%	9.0%	10.0%	4.0%	-	13.0%	11.0%	10.0%	6.0%	4.0%	8.0%	10.0%	9.0%	13.0%
										k							L

(Continued)

Table 5A-2: What Brand(s) of Lawn or Garden Insecticides Did you Purchase? If Possible, Please Refer to the Container

	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Bayer Advanced Complete Insect Killer for Gardens	48	5	14	19	10	44	2	1	1	12	28	8	3	6	14	11	14
	8.0%	5.0%	10.0%	7.0%	10.0%	8.0%	8.0%	6.0%	6.0%	8.0%	9.0%	6.0%	3.0%	5.0%	9.0%	9.0%	11.0%
Ortho Ant-B-Gon	39	2	12	22	3	35	2	1	1	10	20	9	3	6	15	9	6
	7.0%	2.0%	9.0%	8.0%	3.0%	6.0%	8.0%	6.0%	6.0%	6.0%	7.0%	6.0%	3.0%	5.0%	10.0%	8.0%	5.0%
Ortho Fire Ant Killer	37	1	9	26	1	31	3	1	2	10	16	11	5	5	11	9	7
	6.0%	1.0%	7.0%	10.0%	1.0%	6.0%	13.0%	6.0%	13.0%	6.0%	5.0%	8.0%	6.0%	4.0%	7.0%	8.0%	6.0%
Sevin Garden Insect Killer	31	3	10	15	3	28	1	0	2	5	10	16	4	12	8	5	2
	5.0%	3.0%	7.0%	6.0%	3.0%	5.0%	4.0%	-	13.0%	3.0%	3.0%	11.0%	4.0%	10.0%	5.0%	4.0%	2.0%
Bayer Advanced Vegetable and Garden Insect	30	5	7	14	4	25	4	0	1	13	11	6	5	4	6	7	8
	5.0%	5.0%	5.0%	5.0%	4.0%	5.0%	17.0%	-	6.0%	8.0%	4.0%	4.0%	6.0%	3.0%	4.0%	6.0%	7.0%
Spectracide Triazicide Insect Killer for Lawns and Landscapes	29	3	6	15	5	28	0	0	1	3	18	8	8	5	6	2	8
	5.0%	3.0%	4.0%	6.0%	5.0%	5.0%	-	-	6.0%	2.0%	6.0%	6.0%	9.0%	4.0%	4.0%	2.0%	7.0%
Bayer Advanced Natria	27	2	7	10	8	23	2	2	0	15	11	1	4	5	9	6	3
	5.0%	2.0%	5.0%	4.0%	8.0%	4.0%	8.0%	13.0%	-	9.0%	4.0%	1.0%	4.0%	4.0%	6.0%	5.0%	2.0%
Bayer Advanced 24-Hour Grub Killer Plus	26	2	7	12	5	22	3	1	0	9	12	5	3	5	9	4	5
	4.0%	2.0%	5.0%	5.0%	5.0%	4.0%	13.0%	6.0%	-	6.0%	4.0%	3.0%	3.0%	4.0%	6.0%	3.0%	4.0%

(Continued)

Table 5A-2: What Brand(s) of Lawn or Garden Insecticides Did you Purchase? If Possible, Please Refer to the Container

	Region					Dwelling			Mobile home/trailer	Population density			Family income				
	Total	Northeast	Midwest	South	West	One- family house	Two- family house	Three+ family house		Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Bengal Wasp & Hornet	24	5	2	13	4	20	2	2	0	13	9	2	1	1	9	9	4
	4.0%	5.0%	1.0%	5.0%	4.0%	4.0%	8.0%	13.0%	-	8.0%	3.0%	1.0%	1.0%	1.0%	6.0%	8.0%	3.0%
				b						JK					IM	LM	
Bayer Advanced Season Long Grub Control	24	3	7	12	2	24	0	0	0	13	10	1	0	4	7	4	9
	4.0%	3.0%	5.0%	5.0%	2.0%	4.0%	-	-	-	8.0%	3.0%	1.0%	-	3.0%	4.0%	3.0%	7.0%
										JK	k			l	L	l	L
Bayer Advanced OTHER PRODUCT	22	5	4	9	4	19	2	0	1	11	7	4	2	3	6	5	6
	4.0%	5.0%	3.0%	3.0%	4.0%	3.0%	8.0%	-	6.0%	7.0%	2.0%	3.0%	2.0%	3.0%	4.0%	4.0%	5.0%
										J							
Spectracide Fire Ant Killer	18	0	2	13	3	15	2	0	1	3	8	7	2	8	5	0	3
	3.0%	-	1.0%	5.0%	3.0%	3.0%	8.0%	-	6.0%	2.0%	3.0%	5.0%	2.0%	7.0%	3.0%	-	2.0%
				Ab	a									O	o		o
Spectracide Triazicide Lawn Insect Killer Granules	18	1	4	12	1	17	1	0	0	2	7	9	0	3	7	3	5
	3.0%	1.0%	3.0%	5.0%	1.0%	3.0%	4.0%	-	-	1.0%	2.0%	6.0%	-	3.0%	4.0%	3.0%	4.0%
												IJ			L		l
Spectracide Ant Shield	17	8	2	6	1	14	2	1	0	5	7	5	1	2	9	4	1
	3.0%	8.0%	1.0%	2.0%	1.0%	3.0%	8.0%	6.0%	-	3.0%	2.0%	3.0%	1.0%	2.0%	6.0%	3.0%	1.0%
				BCD											ImP		
EcoSmart Garden Insect Killer	17	3	4	6	4	16	1	0	0	3	11	3	3	3	6	1	4
	3.0%	3.0%	3.0%	2.0%	4.0%	3.0%	4.0%	-	-	2.0%	4.0%	2.0%	3.0%	3.0%	4.0%	1.0%	3.0%
Bonide Insect & Grub Control	15	5	0	6	4	14	1	0	0	7	6	2	2	3	3	1	6
	3.0%	5.0%	-	2.0%	4.0%	3.0%	4.0%	-	-	4.0%	2.0%	1.0%	2.0%	3.0%	2.0%	1.0%	5.0%
		B		b	B												o
Amdro Ant	15	2	2	9	2	14	0	1	0	7	5	3	2	3	4	3	3
	3.0%	2.0%	1.0%	3.0%	2.0%	3.0%	-	6.0%	-	4.0%	2.0%	2.0%	2.0%	3.0%	3.0%	3.0%	2.0%
										J							

(Continued)

Table 5A-2: What Brand(s) of Lawn or Garden Insecticides Did you Purchase? If Possible, Please Refer to the Container

	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Captain Jack's	14	2	4	7	1	13	1	0	0	6	7	1	3	4	2	4	1
	2.0%	2.0%	3.0%	3.0%	1.0%	2.0%	4.0%	-	-	4.0%	2.0%	1.0%	3.0%	3.0%	1.0%	3.0%	1.0%
Enforcer BugMax Insect Killer	13	3	4	5	1	10	2	1	0	7	4	2	0	2	6	1	4
	2.0%	3.0%	3.0%	2.0%	1.0%	2.0%	8.0%	6.0%	-	4.0%	1.0%	1.0%	-	2.0%	4.0%	1.0%	3.0%
Garden Tech Sevin	13	3	5	4	1	12	1	0	0	4	6	3	2	3	4	1	3
	2.0%	3.0%	4.0%	2.0%	1.0%	2.0%	4.0%	-	-	3.0%	2.0%	2.0%	2.0%	3.0%	3.0%	1.0%	2.0%
Enforcer Outdoor Insect Killer	13	1	3	7	2	11	1	1	0	4	4	5	2	5	4	1	1
	2.0%	1.0%	2.0%	3.0%	2.0%	2.0%	4.0%	6.0%	-	3.0%	1.0%	3.0%	2.0%	4.0%	3.0%	1.0%	1.0%
Ortho Bug Geta	12	1	1	6	4	10	1	1	0	3	7	2	2	0	3	5	2
	2.0%	1.0%	1.0%	2.0%	4.0%	2.0%	4.0%	6.0%	-	2.0%	2.0%	1.0%	2.0%	-	2.0%	4.0%	2.0%
Bengal OTHER PRODUCT	11	0	3	6	2	10	1	0	0	5	4	2	2	4	1	3	1
	2.0%	-	2.0%	2.0%	2.0%	2.0%	4.0%	-	-	3.0%	1.0%	1.0%	2.0%	3.0%	1.0%	3.0%	1.0%
Ortho Orthene Fire Ant Killer	11	1	2	7	1	8	1	1	1	2	6	3	4	2	3	1	1
	2.0%	1.0%	1.0%	3.0%	1.0%	1.0%	4.0%	6.0%	6.0%	1.0%	2.0%	2.0%	4.0%	2.0%	2.0%	1.0%	1.0%
Bayer Advanced 12-Month Tree and Shrub Protect	11	1	3	5	2	9	1	1	0	4	6	1	2	2	4	1	2
	2.0%	1.0%	2.0%	2.0%	2.0%	2.0%	4.0%	6.0%	-	3.0%	2.0%	1.0%	2.0%	2.0%	3.0%	1.0%	2.0%
Eliminator Fire Ant Granules	10	1	0	7	2	8	0	0	2	3	4	3	0	3	3	3	1
	2.0%	1.0%	-	3.0%	2.0%	1.0%	-	-	13.0%	2.0%	1.0%	2.0%	-	3.0%	2.0%	3.0%	1.0%
b b																	
(Continued)																	

Table 5A-2. What Brand(s) of Lawn or Garden Insecticides Did you Purchase? If Possible, Please Refer to the Container

	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Fortify	10	2	1	5	2	9	1	0	0	2	8	0	2	1	2	2	3
	2.0%	2.0%	1.0%	2.0%	2.0%	2.0%	4.0%	-	-	1.0%	3.0%	-	2.0%	1.0%	1.0%	2.0%	2.0%
	K																
Bengal Yard and Patio	10	0	2	5	3	9	1	0	0	3	7	0	0	3	2	3	2
	2.0%	-	1.0%	2.0%	3.0%	2.0%	4.0%	-	-	2.0%	2.0%	-	-	3.0%	1.0%	3.0%	2.0%
	a																
Garden Safe Multipurpose Insect Killer	9	4	2	3	0	8	0	1	0	2	5	2	3	0	2	1	3
	2.0%	4.0%	1.0%	1.0%	-	1.0%	-	6.0%	-	1.0%	2.0%	1.0%	3.0%	-	1.0%	1.0%	2.0%
	cD																
Bonide Annual Grub Beater	8	1	2	3	2	7	1	0	0	4	4	0	1	1	0	4	2
	1.0%	1.0%	1.0%	1.0%	2.0%	1.0%	4.0%	-	-	3.0%	1.0%	-	1.0%	1.0%	-	3.0%	2.0%
	k																
Eliminator Ant Flea & Tick Granules	8	2	2	4	0	6	1	0	1	2	3	3	0	5	2	1	0
	1.0%	2.0%	1.0%	2.0%	-	1.0%	4.0%	-	6.0%	1.0%	1.0%	2.0%	-	4.0%	1.0%	1.0%	-
	LP																
Green Light Lawn & Garden Many Purpose Dust	8	3	0	3	2	7	0	0	1	3	4	1	0	1	3	3	1
	1.0%	3.0%	-	1.0%	2.0%	1.0%	-	-	6.0%	2.0%	1.0%	1.0%	-	1.0%	2.0%	3.0%	1.0%
	B																
Hi-Yield Kill-A-Bug	8	0	1	6	1	7	0	1	0	2	4	2	3	2	1	2	0
	1.0%	-	1.0%	2.0%	1.0%	1.0%	-	6.0%	-	1.0%	1.0%	1.0%	3.0%	2.0%	1.0%	2.0%	-
	P																
Bonide Systemic Insect	7	2	1	3	1	5	2	0	0	4	3	0	0	2	2	2	1
	1.0%	2.0%	1.0%	1.0%	1.0%	1.0%	8.0%	-	-	3.0%	1.0%	-	-	2.0%	1.0%	2.0%	1.0%
	k																
Bonide Eight	7	1	1	4	1	5	1	1	0	2	1	4	1	2	1	1	2
	1.0%	1.0%	1.0%	2.0%	1.0%	1.0%	4.0%	6.0%	-	1.0%	0	3.0%	1.0%	2.0%	1.0%	1.0%	2.0%
	J																

(Continued)

Table 5A-2. What Brand(s) of Lawn or Garden Insecticides Did you Purchase? If Possible, Please Refer to the Container

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Over N Out Fire Ant Killer	7	2	1	3	1	6	1	0	0	2	4	1	0	1	3	2	1
	1.0%	2.0%	1.0%	1.0%	1.0%	1.0%	4.0%	-	-	1.0%	1.0%	1.0%	-	1.0%	2.0%	2.0%	1.0%
Eliminator Slug & Snail Bait	6	1	0	2	3	6	0	0	0	1	5	0	1	1	1	1	2
	1.0%	1.0%	-	1.0%	3.0%	1.0%	-	-	-	1.0%	2.0%	-	1.0%	1.0%	1.0%	1.0%	2.0%
B																	
Milky Spore (St. Gabriel Organics)	5	1	0	4	0	5	0	0	0	1	2	2	0	1	2	1	1
	1.0%	1.0%	-	2.0%	-	1.0%	-	-	-	1.0%	1.0%	1.0%	-	1.0%	1.0%	1.0%	1.0%
Bonide Annual Tree & Shrub Insect Control	4	1	0	2	1	4	0	0	0	2	2	0	1	0	0	2	1
	1.0%	1.0%	-	1.0%	1.0%	1.0%	-	-	-	1.0%	1.0%	-	1.0%	-	-	2.0%	1.0%
Garden Safe OTHER PRODUCT	4	0	0	4	0	3	0	1	0	1	3	0	1	0	0	1	2
	1.0%	-	-	2.0%	-	1.0%	-	6.0%	-	1.0%	1.0%	-	1.0%	-	-	1.0%	2.0%
Other	12	1	2	5	4	11	1	0	0	3	7	2	2	1	4	2	3
	2.0%	1.0%	1.0%	2.0%	4.0%	2.0%	4.0%	-	-	2.0%	2.0%	1.0%	2.0%	1.0%	3.0%	2.0%	2.0%
Don't know	58	11	20	20	7	53	3	0	2	12	29	17	14	14	10	8	12
	10.0%	11.0%	15.0%	8.0%	7.0%	10.0%	13.0%	-	13.0%	8.0%	10.0%	12.0%	16.0%	12.0%	6.0%	7.0%	10.0%
Cd																	
Sigma	1065	158	242	507	158	946	63	29	27	317	514	234	142	198	300	210	215
	178.0%	160.0%	178.0%	191.0%	158.0%	174.0%	263.0%	181.0%	169.0%	199.0%	172.0%	164.0%	160.0%	171.0%	191.0%	181.0%	176.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

Table 5A-3: What Form was the Lawn or Garden Insecticide?

	Total	Region				Dwelling				Population density				Family income			
		Northeast	Midwest	South	West	One-family house	Two-family house	Three+-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used Lawn or Garden Insecticides in the Past Year	600	99*	136	265	100	544	24**	16**	16**	159	298	143	89*	116	157	116	122
Granules	163	26	32	84	21	151	3	3	6	46	79	38	23	29	47	38	26
	27.0%	26.0%	24.0%	32.0%	21.0%	28.0%	13.0%	19.0%	38.0%	29.0%	27.0%	27.0%	26.0%	25.0%	30.0%	33.0%	21.0%
	bD P																
Ready-to-use (RTU) with trigger spray	152	19	34	67	32	134	9	5	4	48	78	26	25	26	39	30	32
	25.0%	19.0%	25.0%	25.0%	32.0%	25.0%	38.0%	31.0%	25.0%	30.0%	26.0%	18.0%	28.0%	22.0%	25.0%	26.0%	26.0%
	A K k																
Liquid concentrate	140	23	33	64	20	128	5	5	2	39	61	40	18	31	38	27	26
	23.0%	23.0%	24.0%	24.0%	20.0%	24.0%	21.0%	31.0%	13.0%	25.0%	20.0%	28.0%	20.0%	27.0%	24.0%	23.0%	21.0%
	j																
Aerosol Spray	134	21	33	59	21	121	7	2	4	44	67	23	14	25	33	31	31
	22.0%	21.0%	24.0%	22.0%	21.0%	22.0%	29.0%	13.0%	25.0%	28.0%	22.0%	16.0%	16.0%	22.0%	21.0%	27.0%	25.0%
	K I I																
Dust	98	16	27	47	8	85	5	3	5	30	40	28	17	19	24	18	20
	16.0%	16.0%	20.0%	18.0%	8.0%	16.0%	21.0%	19.0%	31.0%	19.0%	13.0%	20.0%	19.0%	16.0%	15.0%	16.0%	16.0%
	d D D j																
RTU liquid with hose sprayer	60	6	10	27	17	56	4	0	0	16	27	17	11	10	15	7	17
	10.0%	6.0%	7.0%	10.0%	17.0%	10.0%	17.0%	-	-	10.0%	9.0%	12.0%	12.0%	9.0%	10.0%	6.0%	14.0%
	ABc O																
Water soluble powder	44	10	11	20	3	37	4	2	1	15	27	2	6	6	13	6	13
	7.0%	10.0%	8.0%	8.0%	3.0%	7.0%	17.0%	13.0%	6.0%	9.0%	9.0%	1.0%	7.0%	5.0%	8.0%	5.0%	11.0%
	D K K																
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Don't know	19	9	5	2	3	18	1	0	0	4	10	5	2	4	7	3	3
	3.0%	9.0%	4.0%	1.0%	3.0%	3.0%	4.0%	-	-	3.0%	3.0%	3.0%	2.0%	3.0%	4.0%	3.0%	2.0%
	bCd C																
Sigma	810	130	185	370	125	730	38	20	22	242	389	179	116	150	216	160	168
	135.0%	131.0%	136.0%	140.0%	125.0%	134.0%	158.0%	125.0%	138.0%	152.0%	131.0%	125.0%	130.0%	129.0%	138.0%	138.0%	138.0%
Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing																	

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

RETAIL OUTLET

Lawn and garden insecticide products are most often purchased at home improvement centers, accounting for 39% of the responses in 2016. Of those that purchase in home improvement centers, the most frequent purchasers are respondents in the South. Discount or mass marketers rank second with 25%. Lawn and garden centers account for 9% of the responses overall, followed by hardware stores with 5%.

PRODUCT USAGE

Various species of ants are the most popular for treatment with lawn and garden insecticides, with 50% of respondents reporting them as a problem. Fire ants were the second most treated insect as reported by 33% of respondents (with a high of 52% in the South). Grubs rank third with 25% of responses, followed by fleas, aphids, and Japanese beetles with 22%, 19%, and 18%, respectively, of respondents indicating that they are the target pests.

Table 5A-4: What Place are each of the Following Purchased Most Often? *Lawn or Garden Insecticides*

	Region					Dwelling			Population density			Family income					
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used 'Lawn or garden insecticides' in Past Year	600	99*	136	265	100	544	24**	16**	16**	159	298	143	89*	116	157	116	122
Home improvement center (e.g. Home Depot, Lowes)	234	38	48	114	34	220	4	4	6	61	119	54	21	38	64	61	50
	39.0%	38.0%	35.0%	43.0%	34.0%	40.0%	17.0%	25.0%	38.0%	38.0%	40.0%	38.0%	24.0%	33.0%	41.0%	53.0%	41.0%
															L	LMnp	L
Discount/mass merchandise store (e.g. Wal-Mart, Kmart)	150	21	38	63	28	133	6	6	5	40	68	42	32	38	32	20	28
	25.0%	21.0%	28.0%	24.0%	28.0%	24.0%	25.0%	38.0%	31.0%	25.0%	23.0%	29.0%	36.0%	33.0%	20.0%	17.0%	23.0%
													NOP	NOp			
Lawn and garden center/nursery	56	17	13	16	10	51	2	2	1	13	33	10	10	7	18	4	17
	9.0%	17.0%	10.0%	6.0%	10.0%	9.0%	8.0%	13.0%	6.0%	8.0%	11.0%	7.0%	11.0%	6.0%	11.0%	3.0%	14.0%
		bC											O		O		MO
Farm supply store	38	4	8	20	6	34	2	2	0	10	12	16	6	6	13	7	6
	6.0%	4.0%	6.0%	8.0%	6.0%	6.0%	8.0%	13.0%	-	6.0%	4.0%	11.0%	7.0%	5.0%	8.0%	6.0%	5.0%
												J					
Hardware store (e.g. True Value)	30	3	10	12	5	25	4	0	1	6	15	9	5	8	4	8	5
	5.0%	3.0%	7.0%	5.0%	5.0%	5.0%	17.0%	-	6.0%	4.0%	5.0%	6.0%	6.0%	7.0%	3.0%	7.0%	4.0%
														n		n	
Mail order/catalog	26	6	3	11	6	25	1	0	0	8	17	1	3	8	4	6	5
	4.0%	6.0%	2.0%	4.0%	6.0%	5.0%	4.0%	-	-	5.0%	6.0%	1.0%	3.0%	7.0%	3.0%	5.0%	4.0%
										K	K			n			
Supermarket/grocery store	22	4	6	9	3	16	4	0	2	5	14	3	4	3	5	6	4
	4.0%	4.0%	4.0%	3.0%	3.0%	3.0%	17.0%	-	13.0%	3.0%	5.0%	2.0%	4.0%	3.0%	3.0%	5.0%	3.0%
Warehouse/wholesale club	17	2	4	8	3	16	1	0	0	7	9	1	0	3	8	2	4
	3.0%	2.0%	3.0%	3.0%	3.0%	3.0%	4.0%	-	-	4.0%	3.0%	1.0%	-	3.0%	5.0%	2.0%	3.0%
										K					L		I
Other	7	0	1	4	2	6	0	1	0	5	1	1	3	0	1	2	1
	1.0%	-	1.0%	2.0%	2.0%	1.0%	-	6.0%	-	3.0%	0	1.0%	3.0%	-	1.0%	2.0%	1.0%
										J			M				
Don't know	20	4	5	8	3	18	0	1	1	4	10	6	5	5	8	0	2
	3.0%	4.0%	4.0%	3.0%	3.0%	3.0%	-	6.0%	6.0%	3.0%	3.0%	4.0%	6.0%	4.0%	5.0%	-	2.0%
													O	O	O		
Sigma	600	99	136	265	100	544	24	16	16	159	298	143	89	116	157	116	122
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

Table 5A.5: What Pests were you Trying to Get Rid of?

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used Lawn or Garden Insecticides in the Past Year	600	99*	136	265	100	544	24**	16**	16**	159	298	143	89*	116	157	116	122
Ants	300	38	73	134	55	275	7	7	11	75	154	71	52	52	82	59	55
	50.0%	38.0%	54.0%	51.0%	55.0%	51.0%	29.0%	44.0%	69.0%	47.0%	52.0%	50.0%	58.0%	45.0%	52.0%	51.0%	45.0%
			A	A	A								mp				
Fire ants	200	21	20	139	20	183	7	5	5	50	106	44	25	46	49	42	38
	33.0%	21.0%	15.0%	52.0%	20.0%	34.0%	29.0%	31.0%	31.0%	31.0%	36.0%	31.0%	28.0%	40.0%	31.0%	36.0%	31.0%
			ABD											I			
Grubs	149	31	46	58	14	136	5	4	4	37	68	44	19	20	45	34	31
	25.0%	31.0%	34.0%	22.0%	14.0%	25.0%	21.0%	25.0%	25.0%	23.0%	23.0%	31.0%	21.0%	17.0%	29.0%	29.0%	25.0%
		cD	CD	d								j			M	M	
Fleas	132	17	27	72	16	113	8	4	7	28	61	43	30	29	24	24	25
	22.0%	17.0%	20.0%	27.0%	16.0%	21.0%	33.0%	25.0%	44.0%	18.0%	20.0%	30.0%	34.0%	25.0%	15.0%	21.0%	20.0%
			AD									U	NOP	N			
Aphids	111	9	28	45	29	101	4	2	4	30	52	29	17	24	22	23	25
	19.0%	9.0%	21.0%	17.0%	29.0%	19.0%	17.0%	13.0%	25.0%	19.0%	17.0%	20.0%	19.0%	21.0%	14.0%	20.0%	20.0%
			A	a	AC												
Japanese beetles	110	21	32	50	7	101	2	3	4	25	52	33	11	25	28	21	25
	18.0%	21.0%	24.0%	19.0%	7.0%	19.0%	8.0%	19.0%	25.0%	16.0%	17.0%	23.0%	12.0%	22.0%	18.0%	18.0%	20.0%
		D	D	D										I			
Snails/slugs	87	8	16	47	16	79	4	3	1	25	42	20	16	17	21	14	19
	15.0%	8.0%	12.0%	18.0%	16.0%	15.0%	17.0%	19.0%	6.0%	16.0%	14.0%	14.0%	18.0%	15.0%	13.0%	12.0%	16.0%
			A	a													
Tomato worms	75	8	22	32	13	66	4	2	3	15	30	30	13	17	24	7	14
	13.0%	8.0%	16.0%	12.0%	13.0%	12.0%	17.0%	13.0%	19.0%	9.0%	10.0%	21.0%	15.0%	15.0%	15.0%	6.0%	11.0%
			a									U	O	O	O		
(Continued)																	

Table 5A-5: What Pests were you Trying to Get Rid of?

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Grasshoppers	73	7	16	34	16	65	5	2	1	25	31	17	15	11	17	15	15
	12.0%	7.0%	12.0%	13.0%	16.0%	12.0%	21.0%	13.0%	6.0%	16.0%	10.0%	12.0%	17.0%	9.0%	11.0%	13.0%	12.0%
	a					j											
Caterpillars	70	13	7	36	14	65	2	2	1	21	37	12	13	14	14	12	17
	12.0%	13.0%	5.0%	14.0%	14.0%	12.0%	8.0%	13.0%	6.0%	13.0%	12.0%	8.0%	15.0%	12.0%	9.0%	10.0%	14.0%
	B					B											
Potato bugs	63	9	11	30	13	57	3	2	1	13	35	15	12	11	20	7	13
	11.0%	9.0%	8.0%	11.0%	13.0%	10.0%	13.0%	13.0%	6.0%	8.0%	12.0%	10.0%	13.0%	9.0%	13.0%	6.0%	11.0%
						o											
Other beetles	61	12	13	23	13	56	1	1	3	21	26	14	11	8	14	15	13
	10.0%	12.0%	10.0%	9.0%	13.0%	10.0%	4.0%	6.0%	19.0%	13.0%	9.0%	10.0%	12.0%	7.0%	9.0%	13.0%	11.0%
Mealy bugs	50	10	8	21	11	43	4	2	1	20	22	8	7	8	13	13	9
	8.0%	10.0%	6.0%	8.0%	11.0%	8.0%	17.0%	13.0%	6.0%	13.0%	7.0%	6.0%	8.0%	7.0%	8.0%	11.0%	7.0%
	jk																
Pill bugs	49	7	10	21	11	46	3	0	0	21	20	8	5	8	15	11	10
	8.0%	7.0%	7.0%	8.0%	11.0%	8.0%	13.0%	-	-	13.0%	7.0%	6.0%	6.0%	7.0%	10.0%	9.0%	8.0%
	JK																
Other	29	2	4	15	8	27	1	0	1	6	11	12	5	9	8	4	3
	5.0%	2.0%	3.0%	6.0%	8.0%	5.0%	4.0%	-	6.0%	4.0%	4.0%	8.0%	6.0%	8.0%	5.0%	3.0%	2.0%
	ab					ij											
Don't know	24	8	8	5	3	22	0	2	0	7	12	5	6	5	8	2	3
	4.0%	8.0%	6.0%	2.0%	3.0%	4.0%	-	13.0%	-	4.0%	4.0%	3.0%	7.0%	4.0%	5.0%	2.0%	2.0%
	C					o											
Sigma	1583	221	341	762	259	1435	60	41	47	419	759	405	257	304	404	303	315
	264.0%	223.0%	251.0%	288.0%	259.0%	264.0%	250.0%	256.0%	294.0%	264.0%	255.0%	283.0%	289.0%	262.0%	257.0%	261.0%	258.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

5B. OUTDOOR NON-PLANT INSECTICIDES

OVERVIEW

Overall, 58% of the respondents indicate that they do not use outdoor non-plant insecticides. Approximately 30% of the respondents report purchasing these products during the last 12 months.

Table 5B-1: When was the Last Time you Bought Each of the Following Products? "Outdoor Non-plant Insecticides (Yard Fogger, etc.)"

	Total	Region				Dwelling			Population density				Family income				
		Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile Home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: All Respondents	1498	290	357	571	280	1328	55*	58*	57*	369	769	360	269	321	370	254	284
Top 2 Box (Net)	451	85	82	196	88	403	23	12	13	136	229	86	57	74	124	86	110
	30.0%	29.0%	23.0%	34.0%	31.0%	30.0%	42.0%	21.0%	23.0%	37.0%	30.0%	24.0%	21.0%	23.0%	34.0%	34.0%	39.0%
Less than 6 months ago	b			B	B		eGH			JK	K				LM	LM	LM
	210	39	37	94	40	185	11	4	10	65	101	44	27	35	54	38	56
6 months to 1 year ago	14.0%	13.0%	10.0%	16.0%	14.0%	14.0%	20.0%	7.0%	18.0%	18.0%	13.0%	12.0%	10.0%	11.0%	15.0%	15.0%	20.0%
				B			G		g	JK					I	I	LMn
Bottom 2 Box (Net)	241	46	45	102	48	218	12	8	3	71	128	42	30	39	70	48	54
	16.0%	16.0%	13.0%	18.0%	17.0%	16.0%	22.0%	14.0%	5.0%	19.0%	17.0%	12.0%	11.0%	12.0%	19.0%	19.0%	19.0%
More than 1 year ago				B		H	H			K	K				LM	LM	LM
	1047	205	275	375	192	925	32	46	44	233	540	274	212	247	246	168	174
Do not use product	70.0%	71.0%	77.0%	66.0%	69.0%	70.0%	58.0%	79.0%	77.0%	63.0%	70.0%	76.0%	79.0%	77.0%	66.0%	66.0%	61.0%
			aCD			f		F	F		I	IJ	NOP	NOP			
Sigma	179	26	49	67	37	160	6	4	9	42	90	47	26	41	40	35	37
	12.0%	9.0%	14.0%	12.0%	13.0%	12.0%	11.0%	7.0%	16.0%	11.0%	12.0%	13.0%	10.0%	13.0%	11.0%	14.0%	13.0%
Sigma	a																
	868	179	226	308	155	765	26	42	35	191	450	227	186	206	206	133	137
Sigma	58.0%	62.0%	63.0%	54.0%	55.0%	58.0%	47.0%	72.0%	61.0%	52.0%	59.0%	63.0%	69.0%	64.0%	56.0%	52.0%	48.0%
		C	CD					EF			I	I	NOP	NOP	p		
Sigma	1498	290	357	571	280	1328	55	58	57	369	769	360	269	321	370	254	284
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base																	

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base

GEOGRAPHIC REGION

Respondents in the South report the highest incidence of outdoor non-plant insecticide purchase, with 34%, and respondents in the Midwest report the lowest incidence of purchase, with 23%.

POPULATION DENSITY

Purchase incidence of outdoor non-plant insecticides is highest among urban respondents, where 37% report purchasing, and lowest among rural respondents, where 24% report purchasing.

FAMILY INCOME

In 2016, households with an income of \$100,000 or more purchased the most outdoor non-plant insecticides (39%) in the last 12 months. Households with an income between \$25,000 and \$50,000 purchased the least, with 21% of the respondents reporting a purchase.

BRAND RECOLLECTION

In 2016, Black Flag is the leading brand of outdoor non-plant insecticides used, with 24% of respondents reporting using one of the various Black Flag products. Of the Black Flag products, Black Flag Wasp/Hornet is the leading individual product with 15%, followed by Black Flag Outdoor Fogger with 9%. Ortho (all products combined) is the second leading brand of outdoor non-plant insecticides used, with 21% of respondents reporting purchase. Bengal (all products combined) is the third leading brand of outdoor non-plant insecticides used, with 18%. Of the two Bengal products, Bengal Wasp & Hornet accounts for 12% of the responses.

Ortho Bug B Gon, with overall purchase of 11%, is most highly purchased in the Northeast with 15% of responses. There was no significant difference in purchases of Black Flag Wasp/Hornet regionally, or in urban, suburban, and rural areas.

Table 5B-2: What Brands of Outdoor Non-plant Insecticides did you Purchase? (If feasible, please refer to the Container)

	Total	Region				Dwelling			Population density				Family income				
		Northeast	Midwest	South	West	One-family house	Two-family house	Three+family house	Mobile Home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Base: Have Used Outdoor Non-Plant Insecticides (yard fogger, etc.) in the Past Year	451	85*	82*	196	88*	403	23**	12**	13**	136	229	86*	57*	74*	124	86*	110
Black Flag Wasp/Hornet	69	12	15	30	12	62	2	2	3	21	35	13	11	5	21	13	19
	15.0%	14.0%	18.0%	15.0%	14.0%	15.0%	9.0%	17.0%	23.0%	15.0%	15.0%	15.0%	19.0%	7.0%	17.0%	15.0%	17.0%
Bengal Wasp & Hornet	52	9	10	20	13	46	3	3	0	30	17	5	4	11	15	11	11
	12.0%	11.0%	12.0%	10.0%	15.0%	11.0%	13.0%	25.0%	-	22.0%	7.0%	6.0%	7.0%	15.0%	12.0%	13.0%	10.0%
Ortho Bug B Gon	49	13	9	17	10	42	1	2	4	10	29	10	7	10	17	7	8
	11.0%	15.0%	11.0%	9.0%	11.0%	10.0%	4.0%	17.0%	31.0%	7.0%	13.0%	12.0%	12.0%	14.0%	14.0%	8.0%	7.0%
Raid Wasp & Hornet	48	6	14	17	12	46	2	0	1	7	29	13	8	8	20	6	7
	11.0%	7.0%	17.0%	9.0%	14.0%	11.0%	9.0%	-	8.0%	5.0%	13.0%	15.0%	14.0%	11.0%	16.0%	7.0%	6.0%
Raid Flying Insect Killer	47	7	7	26	7	43	2	1	1	11	25	11	9	9	15	4	10
	10.0%	8.0%	9.0%	13.0%	8.0%	11.0%	9.0%	8.0%	8.0%	8.0%	11.0%	13.0%	16.0%	12.0%	12.0%	5.0%	9.0%
Black Flag Outdoor Fogger	40	5	8	18	9	31	4	3	2	16	19	5	7	7	11	9	6
	9.0%	6.0%	10.0%	9.0%	10.0%	8.0%	17.0%	25.0%	15.0%	12.0%	8.0%	6.0%	12.0%	9.0%	9.0%	10.0%	5.0%
Cutter Backyard Bug Control	38	10	4	17	7	32	4	1	1	17	17	4	10	7	7	6	8
	8.0%	12.0%	5.0%	9.0%	8.0%	8.0%	17.0%	8.0%	8.0%	13.0%	7.0%	5.0%	18.0%	9.0%	6.0%	7.0%	7.0%
Raid Yard Guard	37	9	7	13	8	32	3	1	1	11	20	6	4	8	11	6	8
	8.0%	11.0%	9.0%	7.0%	9.0%	8.0%	13.0%	8.0%	8.0%	8.0%	9.0%	7.0%	7.0%	11.0%	9.0%	7.0%	7.0%
Bayer Advanced	35	6	4	15	10	32	2	0	1	14	14	7	3	4	13	6	9
	8.0%	7.0%	5.0%	8.0%	11.0%	8.0%	9.0%	-	8.0%	10.0%	6.0%	8.0%	5.0%	5.0%	10.0%	7.0%	8.0%
Cutter Backyard Bug Control	29	6	3	16	4	26	2	1	0	7	17	5	1	4	10	8	6
	6.0%	7.0%	4.0%	8.0%	5.0%	6.0%	9.0%	8.0%	-	5.0%	7.0%	6.0%	2.0%	5.0%	8.0%	9.0%	5.0%
Raid House & Garden Bug Killer	29	4	6	15	4	24	1	2	2	7	18	4	2	5	10	4	8
	6.0%	5.0%	7.0%	8.0%	5.0%	6.0%	4.0%	17.0%	15.0%	5.0%	8.0%	5.0%	4.0%	7.0%	8.0%	5.0%	7.0%
Bengal Yard & Patio	27	6	3	14	4	25	0	1	1	14	12	1	3	4	8	6	6
	6.0%	7.0%	4.0%	7.0%	5.0%	6.0%	-	8.0%	8.0%	10.0%	5.0%	1.0%	5.0%	5.0%	6.0%	7.0%	5.0%
Hot Shot Wasp/Hornet	24	4	4	11	5	20	0	0	4	7	11	6	4	7	7	3	3
	5.0%	5.0%	5.0%	6.0%	6.0%	5.0%	-	-	31.0%	5.0%	5.0%	7.0%	7.0%	9.0%	6.0%	3.0%	3.0%
Ortho Hornet/Wasp	24	2	4	8	10	20	2	0	2	10	8	6	3	4	5	4	8
	5.0%	2.0%	5.0%	4.0%	11.0%	5.0%	9.0%	-	15.0%	7.0%	3.0%	7.0%	5.0%	5.0%	4.0%	5.0%	7.0%
Bite Shield Guardian	23	6	5	11	1	18	4	1	0	15	5	3	3	4	9	1	6
	5.0%	7.0%	6.0%	6.0%	1.0%	4.0%	17.0%	8.0%	-	11.0%	2.0%	3.0%	5.0%	5.0%	7.0%	1.0%	5.0%
Cutter Deck & Patio Bug Control	22	5	4	6	7	16	4	2	0	10	11	1	1	3	4	9	5
	5.0%	6.0%	5.0%	3.0%	8.0%	4.0%	17.0%	17.0%	-	7.0%	5.0%	1.0%	2.0%	4.0%	3.0%	10.0%	5.0%
Ortho Max Flying Insect Killer	21	2	6	10	3	18	2	1	0	7	11	3	2	5	6	6	2
	5.0%	2.0%	7.0%	5.0%	3.0%	4.0%	9.0%	8.0%	-	5.0%	5.0%	3.0%	4.0%	7.0%	5.0%	7.0%	2.0%
Mosquito Barrier	20	5	4	8	3	15	3	1	1	6	10	4	2	4	5	3	6
	4.0%	6.0%	5.0%	4.0%	3.0%	4.0%	13.0%	8.0%	8.0%	4.0%	4.0%	5.0%	4.0%	5.0%	4.0%	3.0%	5.0%
Bonide Bug Beater	19	4	4	9	2	17	2	0	0	10	7	2	2	2	5	5	5
	4.0%	5.0%	5.0%	5.0%	2.0%	4.0%	9.0%	-	-	7.0%	3.0%	2.0%	4.0%	3.0%	4.0%	6.0%	5.0%

(Continued)

Table 5B-2: What Brands of Outdoor Non-plant Insecticides did you Purchase? If Possible, Please Refer to the Column(s)

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+family house	Mobile Home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
EcoSmart Mosquito & Tick Control	19 4.0%	3 4.0%	3 4.0%	12 6.0%	1 1.0%	17 4.0%	1 4.0%	0 -	1 8.0%	7 5.0%	8 3.0%	4 5.0%	5 9.0%	2 3.0%	4 3.0%	7 8.0%	1 1.0%
Mosquito Bits	17 4.0%	5 7.0%	0 -	7 4.0%	4 5.0%	14 3.0%	2 9.0%	1 8.0%	0 -	6 4.0%	10 4.0%	1 1.0%	1 2.0%	4 5.0%	5 4.0%	3 3.0%	4 4.0%
Spectracide Wasp & Hornet Killer	17 4.0%	1 1.0%	3 4.0%	8 4.0%	5 6.0%	15 4.0%	2 9.0%	0 -	0 -	6 4.0%	6 3.0%	5 6.0%	2 4.0%	3 4.0%	5 4.0%	2 2.0%	5 5.0%
Cutter Deck & Patio	16 4.0%	3 4.0%	4 5.0%	6 3.0%	3 3.0%	14 3.0%	2 9.0%	0 -	0 -	7 5.0%	6 3.0%	3 3.0%	2 4.0%	2 3.0%	8 6.0%	2 2.0%	2 2.0%
Dr. T's Nature Products Mosquito	14 3.0%	5 6.0%	3 4.0%	3 2.0%	3 3.0%	10 2.0%	4 17.0%	0 -	0 -	7 5.0%	5 2.0%	2 2.0%	2 4.0%	2 3.0%	3 2.0%	5 6.0%	2 2.0%
Mosquito Magnet	14 3.0%	4 5.0%	1 1.0%	5 3.0%	4 5.0%	14 3.0%	0 -	0 -	0 -	6 4.0%	7 3.0%	1 1.0%	1 2.0%	2 3.0%	4 3.0%	5 6.0%	2 2.0%
Spectracide Bug Stop	13 3.0%	2 2.0%	2 2.0%	4 2.0%	5 6.0%	11 3.0%	2 9.0%	0 -	0 -	5 4.0%	7 3.0%	1 1.0%	0 -	2 3.0%	4 3.0%	4 5.0%	3 3.0%
Raid OTHER PRODUCT	11 2.0%	2 2.0%	1 1.0%	2 1.0%	6 7.0%	9 2.0%	1 4.0%	0 -	1 8.0%	4 3.0%	6 3.0%	1 1.0%	1 2.0%	3 4.0%	4 3.0%	1 1.0%	2 2.0%
Enforcer Flying Insect Killer	10 2.0%	1 1.0%	0 -	5 3.0%	4 5.0%	9 2.0%	0 -	0 -	1 8.0%	5 4.0%	3 1.0%	2 2.0%	2 4.0%	1 1.0%	4 3.0%	2 2.0%	1 1.0%
Raid Earth Options	9 2.0%	2 2.0%	1 1.0%	5 3.0%	1 1.0%	9 2.0%	0 -	0 -	0 -	3 2.0%	5 2.0%	1 1.0%	1 2.0%	1 1.0%	3 2.0%	2 2.0%	2 2.0%
Enforcer OTHER PRODUCT	8 2.0%	2 2.0%	1 1.0%	2 1.0%	3 3.0%	6 1.0%	1 4.0%	1 8.0%	0 -	7 5.0%	1 0	0 -	0 -	2 3.0%	4 3.0%	1 1.0%	1 1.0%
Repel Camp Shield Outdoor Insect Control	7 2.0%	0 -	2 2.0%	4 2.0%	1 1.0%	4 1.0%	2 9.0%	0 -	1 8.0%	4 3.0%	3 1.0%	0 -	0 -	2 3.0%	4 3.0%	0 -	1 1.0%
Victor Poison Free	6 1.0%	1 1.0%	1 1.0%	2 1.0%	2 2.0%	6 1.0%	0 -	0 -	0 -	3 2.0%	3 1.0%	0 -	0 -	0 -	3 2.0%	0 -	3 3.0%
Summit Mosquito Dunks	5 1.0%	1 1.0%	0 -	3 2.0%	1 1.0%	4 1.0%	1 4.0%	0 -	0 -	2 1.0%	3 1.0%	0 -	0 -	0 -	2 2.0%	2 2.0%	1 1.0%
Zodiac Pre-strike Outdoor Fogger	5 1.0%	0 -	2 2.0%	0 -	3 3.0%	4 1.0%	1 4.0%	0 -	0 -	2 1.0%	2 1.0%	1 1.0%	0 -	2 3.0%	2 2.0%	0 -	1 1.0%
Zodiac Yard & Garden Spray	5 1.0%	1 1.0%	1 1.0%	1 1.0%	2 2.0%	4 1.0%	1 4.0%	0 -	0 -	4 3.0%	1 0	0 -	1 2.0%	1 1.0%	2 2.0%	0 -	1 1.0%
Zodiac Pre-strike Torpedo	4 1.0%	0 -	0 -	0 -	4 5.0%	3 1.0%	1 4.0%	0 -	0 -	1 1.0%	2 1.0%	1 1.0%	1 2.0%	0 -	1 1.0%	0 -	2 2.0%
Safer Yellow Jacket	2 0	1 1.0%	0 -	0 -	1 1.0%	2 0	0 -	0 -	0 -	1 1.0%	1 0	0 -	0 -	0 -	2 2.0%	0 -	0 -
Don't know	47 10.0%	14 16.0%	9 11.0%	15 8.0%	9 10.0%	46 11.0%	0 -	1 8.0%	0 -	4 3.0%	33 14.0%	10 12.0%	6 11.0%	6 8.0%	14 11.0%	10 12.0%	11 10.0%
Other, please specify:	4 1.0%	1 1.0%	0 -	1 1.0%	2 2.0%	4 1.0%	0 -	0 -	0 -	2 1.0%	2 1.0%	0 -	1 2.0%	0 -	1 1.0%	0 -	2 2.0%
Sigma	887 197.0%	171 201.0%	155 189.0%	366 187.0%	195 222.0%	770 191.0%	64 278.0%	25 208.0%	28 215.0%	316 232.0%	429 187.0%	142 165.0%	112 196.0%	146 197.0%	278 224.0%	163 190.0%	188 171.0%
Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing																	

Proportions/Means: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

Table 5B-3. What Form was the Outdoor Non-plant Insecticide?

	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile Home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
Base: Have Used Outdoor Non-Plant Insecticides (yard fogger, etc.) in the Past Year	451	85*	82*	196	88*	403	23**	12**	13**	136	229	86*	57*	74*	124	86*	110
Aerosol Spray	250	45	45	111	49	220	12	9	9	71	123	56	32	48	71	40	59
	55.0%	53.0%	55.0%	57.0%	56.0%	55.0%	52.0%	75.0%	69.0%	52.0%	54.0%	65.0%	56.0%	65.0%	57.0%	47.0%	54.0%
Ready-to-use (RTU) liquid with applicator	96	14	17	48	17	78	9	3	6	30	52	14	16	15	22	20	23
	21.0%	16.0%	21.0%	24.0%	19.0%	19.0%	39.0%	25.0%	46.0%	22.0%	23.0%	16.0%	28.0%	20.0%	18.0%	23.0%	21.0%
Liquid concentrate	74	13	18	30	13	64	7	3	0	31	30	13	8	9	18	20	19
	16.0%	15.0%	22.0%	15.0%	15.0%	16.0%	30.0%	25.0%	-	23.0%	13.0%	15.0%	14.0%	12.0%	15.0%	23.0%	17.0%
Granules	57	10	6	28	13	52	0	2	3	28	23	6	8	6	17	12	14
	13.0%	12.0%	7.0%	14.0%	15.0%	13.0%	-	17.0%	23.0%	21.0%	10.0%	7.0%	14.0%	8.0%	14.0%	14.0%	13.0%
Dust	52	14	8	20	10	48	2	2	0	20	27	5	9	5	16	12	10
	12.0%	16.0%	10.0%	10.0%	11.0%	12.0%	9.0%	17.0%	-	15.0%	12.0%	6.0%	16.0%	7.0%	13.0%	14.0%	9.0%
RTU liquid without applicator	35	9	4	14	8	28	5	1	1	16	15	4	2	6	12	6	9
	8.0%	11.0%	5.0%	7.0%	9.0%	7.0%	22.0%	8.0%	8.0%	12.0%	7.0%	5.0%	4.0%	8.0%	10.0%	7.0%	8.0%
Water soluble powder	22	4	2	11	5	19	2	0	1	10	10	2	3	4	6	4	5
	5.0%	5.0%	2.0%	6.0%	6.0%	5.0%	9.0%	-	8.0%	7.0%	4.0%	2.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Other	6	1	0	3	2	6	0	0	0	0	5	1	0	0	3	1	2
	1.0%	1.0%	-	2.0%	2.0%	1.0%	-	-	-	-	2.0%	1.0%	-	-	2.0%	1.0%	2.0%
Don't know	25	11	4	7	3	25	0	0	0	3	16	6	4	4	11	4	2
	6.0%	13.0%	5.0%	4.0%	3.0%	6.0%	-	-	-	2.0%	7.0%	7.0%	7.0%	5.0%	9.0%	5.0%	2.0%
Sigma	617	121	104	272	120	540	37	20	20	209	301	107	82	97	176	119	143
	137.0%	142.0%	127.0%	139.0%	136.0%	134.0%	161.0%	167.0%	154.0%	154.0%	131.0%	124.0%	144.0%	131.0%	142.0%	138.0%	130.0%
Proportions/Means: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P. Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing																	

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

PRODUCT FORM

Aerosol sprays account for 55% of the responses concerning product form purchased in 2016. Regionally, aerosols were used most in the South region with 57%, followed by West with 56% of responses. Ready-to-use liquid with applicator and liquid concentrates ranked second and third with 21% and 16%, respectively.

RETAIL OUTLET

Home improvement centers and discount or mass-merchandise stores are the primary retail outlets for outdoor non-plant insecticides, with 31% and 25% of the respondents, respectively, reporting purchases at these outlets in 2016. Lawn and garden centers rank a distant third with 8% of the respondents. Of those who purchase at home improvement centers, respondents with higher incomes purchase most often, with 37%, versus the lowest income respondents, with 16%. Suburban respondents purchase at home improvement centers at a greater rate (35%) than urban respondents (25%).

PRODUCT USAGE

The key pests outdoor non-plant insecticides are used for are mosquitoes with 46%, wasps and hornets with 36%, ants with 31%, bees with 24%, and flies with 21%. Regionally, mosquito control is highest in the South, and lowest in the West and Midwest. Wasp and hornet control is highest in the Midwest, at 40%, and lowest in the Northeast, with 27%.

NUMBER OF TIMES PURCHASED

When asked how many times respondents purchased outdoor non-plant insecticides, 30% said they purchased them just once, and 34% reported purchasing them twice. There were 22% that purchased three times, 8% said they purchased four times, and 6% said that they purchased five or more times.

Table 5B-4: What Place(s) Have you Used the Following Pesticide Most Often? "Outdoor Non-plant Insecticides (Yard Fogger, etc.)"

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
Base: Have Used "Outdoor non-plant insecticides (yard fogger, etc.)" in Past Year	451	85*	82*	196	88*	403	23**	12**	13**	136	229	86*	57*	74*	124	86*	110
Home improvement center (e.g. Home Depot, Lowes)	140	24	31	63	22	126	7	3	4	34	80	26	9	25	34	31	41
	31.0%	28.0%	38.0%	32.0%	25.0%	31.0%	30.0%	25.0%	31.0%	25.0%	35.0%	30.0%	16.0%	34.0%	27.0%	36.0%	37.0%
	d										I		L	I	L	L	
Discount/mass merchandise store (e.g. Wal-Mart, Kmart)	111	13	18	59	21	100	2	5	4	30	49	32	17	25	32	17	20
	25.0%	15.0%	22.0%	30.0%	24.0%	25.0%	9.0%	42.0%	31.0%	22.0%	21.0%	37.0%	30.0%	34.0%	26.0%	20.0%	18.0%
	A											II	p	OP			
Lawn and garden center/nursery	36	10	7	12	7	35	0	1	0	7	24	5	4	2	13	6	11
	8.0%	12.0%	9.0%	6.0%	8.0%	9.0%	-	8.0%	-	5.0%	10.0%	6.0%	7.0%	3.0%	10.0%	7.0%	10.0%
											I				M		m
Supermarket/grocery store	31	7	2	13	9	27	2	2	0	10	17	4	8	3	10	4	6
	7.0%	8.0%	2.0%	7.0%	10.0%	7.0%	9.0%	17.0%	-	7.0%	7.0%	5.0%	14.0%	4.0%	8.0%	5.0%	5.0%
				B									Map				
Hardware store (e.g. True Value)	29	6	11	7	5	26	2	0	1	10	14	5	2	5	4	14	4
	6.0%	7.0%	13.0%	4.0%	6.0%	6.0%	9.0%	-	8.0%	7.0%	6.0%	6.0%	4.0%	7.0%	3.0%	16.0%	4.0%
			Cd													LmNP	
Warehouse/wholesale club	24	9	1	8	6	20	4	0	0	10	11	3	3	2	7	5	7
	5.0%	11.0%	1.0%	4.0%	7.0%	5.0%	17.0%	-	-	7.0%	5.0%	3.0%	5.0%	3.0%	6.0%	6.0%	6.0%
			BC		b												
Farm supply store	20	3	4	9	4	17	3	0	0	9	8	3	3	3	7	5	2
	4.0%	4.0%	5.0%	5.0%	5.0%	4.0%	13.0%	-	-	7.0%	3.0%	3.0%	5.0%	4.0%	6.0%	6.0%	2.0%
Mail order/catalog	12	1	1	7	3	10	0	0	2	3	8	1	4	0	3	0	5
	3.0%	1.0%	1.0%	4.0%	3.0%	2.0%	-	-	15.0%	2.0%	3.0%	1.0%	7.0%	-	2.0%	-	5.0%
																mO	
Other	21	5	2	9	5	18	2	0	1	14	5	2	2	3	5	3	8
	5.0%	6.0%	2.0%	5.0%	6.0%	4.0%	9.0%	-	8.0%	10.0%	2.0%	2.0%	4.0%	4.0%	4.0%	3.0%	7.0%
										JK							
Don't know	27	7	5	9	6	24	1	1	1	9	13	5	5	6	9	1	6
	6.0%	8.0%	6.0%	5.0%	7.0%	6.0%	4.0%	8.0%	8.0%	7.0%	6.0%	6.0%	9.0%	8.0%	7.0%	1.0%	5.0%
													O	O	O		
Sigma	451	85	82	196	88	403	23	12	13	136	229	86	57	74	124	86	110
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Proportions/Means: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

Table 5B-5. What Pests were you Trying to Get Rid of?

	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
Base: Have Used Outdoor Non-Plant Insecticides (yard fogger, etc.) in the Past Year	451	85*	82*	196	88*	403	23**	12**	13**	136	229	86*	57*	74*	124	86*	110
Mosquitoes	207	39	35	95	38	179	13	8	7	55	110	42	27	35	60	38	47
	46.0%	46.0%	43.0%	48.0%	43.0%	44.0%	57.0%	67.0%	54.0%	40.0%	48.0%	49.0%	47.0%	47.0%	48.0%	44.0%	43.0%
Wasps/Hornets	161	23	33	77	28	145	6	4	6	37	86	38	27	25	45	22	42
	36.0%	27.0%	40.0%	39.0%	32.0%	36.0%	26.0%	33.0%	46.0%	27.0%	38.0%	44.0%	47.0%	34.0%	36.0%	26.0%	38.0%
Ants		a	a							I	I	O				o	
	140	22	30	60	28	126	5	5	4	38	80	22	20	19	47	22	32
Bees	31.0%	26.0%	37.0%	31.0%	32.0%	31.0%	22.0%	42.0%	31.0%	28.0%	35.0%	26.0%	35.0%	26.0%	38.0%	26.0%	29.0%
															mo		
Flies	107	24	15	46	22	95	3	7	2	39	52	16	15	15	30	21	26
	24.0%	28.0%	18.0%	23.0%	25.0%	24.0%	13.0%	58.0%	15.0%	29.0%	23.0%	19.0%	26.0%	20.0%	24.0%	24.0%	24.0%
Spiders										k							
	94	16	16	41	21	82	5	4	3	36	43	15	14	11	24	21	24
Fire ants	21.0%	19.0%	20.0%	21.0%	24.0%	20.0%	22.0%	33.0%	23.0%	26.0%	19.0%	17.0%	25.0%	15.0%	19.0%	24.0%	22.0%
										J							
Fleas	81	10	17	35	19	71	5	3	2	22	43	16	11	13	23	15	19
	18.0%	12.0%	21.0%	18.0%	22.0%	18.0%	22.0%	25.0%	15.0%	16.0%	19.0%	19.0%	19.0%	18.0%	19.0%	17.0%	17.0%
Fire ants																	
Fleas	80	9	7	51	13	73	1	6	0	26	43	11	11	12	27	12	18
	18.0%	11.0%	9.0%	26.0%	15.0%	18.0%	4.0%	50.0%	-	19.0%	19.0%	13.0%	19.0%	16.0%	22.0%	14.0%	16.0%
Fleas																	
Fleas	76	13	10	38	15	63	4	4	5	18	41	17	18	7	21	10	20
	17.0%	15.0%	12.0%	19.0%	17.0%	16.0%	17.0%	33.0%	38.0%	13.0%	18.0%	20.0%	32.0%	9.0%	17.0%	12.0%	18.0%
MNOp																	
(Continued)																	

Table 5B-5: What Pests were you Trying to Get Rid of?

	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Used as a preventative	40	6	7	19	8	35	1	3	1	10	22	8	3	6	11	5	15
	9.0%	7.0%	9.0%	10.0%	9.0%	9.0%	4.0%	25.0%	8.0%	7.0%	10.0%	9.0%	5.0%	8.0%	9.0%	6.0%	14.0%
	o																
Moths	34	4	3	19	8	31	2	0	1	16	16	2	3	6	8	9	8
	8.0%	5.0%	4.0%	10.0%	9.0%	8.0%	9.0%	-	8.0%	12.0%	7.0%	2.0%	5.0%	8.0%	6.0%	10.0%	7.0%
	b								K								
Other	4	1	0	2	1	4	0	0	0	2	1	1	1	1	1	0	1
	1.0%	1.0%	-	1.0%	1.0%	1.0%	-	-	-	1.0%	0	1.0%	2.0%	1.0%	1.0%	-	1.0%
Don't know	24	10	3	6	5	24	0	0	0	2	16	6	4	2	10	4	4
	5.0%	12.0%	4.0%	3.0%	6.0%	6.0%	-	-	-	1.0%	7.0%	7.0%	7.0%	3.0%	8.0%	5.0%	4.0%
	bC										l						
Sigma	1048	177	176	489	206	928	45	44	31	301	553	194	154	152	307	179	256
	232.0%	208.0%	215.0%	249.0%	234.0%	230.0%	196.0%	367.0%	238.0%	221.0%	241.0%	226.0%	270.0%	205.0%	248.0%	208.0%	233.0%
Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used . * small base; ** very small base (under 30) ineligible for sig testing																	

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

Table 5B-6: Number of Times Outdoor Non-plant Insecticides were Purchased Last Year?																	
	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used Outdoor Non-Plant Insecticides (yard fogger, etc.) in the Past Year	451	85*	82*	196	88*	403	23**	12**	13**	136	229	86*	57*	74*	124	86*	110
(1) 1	135	31	24	51	29	125	7	2	1	40	72	23	21	23	38	19	34
	30.0%	36.0%	29.0%	26.0%	33.0%	31.0%	30.0%	17.0%	8.0%	29.0%	31.0%	27.0%	37.0%	31.0%	31.0%	22.0%	31.0%
	c												o				
(2) 2	153	30	33	62	28	132	8	6	7	45	78	30	19	29	40	30	35
	34.0%	35.0%	40.0%	32.0%	32.0%	33.0%	35.0%	50.0%	54.0%	33.0%	34.0%	35.0%	33.0%	39.0%	32.0%	35.0%	32.0%
(3) 3	97	13	17	52	15	85	7	1	4	25	52	20	10	15	32	21	19
	22.0%	15.0%	21.0%	27.0%	17.0%	21.0%	30.0%	8.0%	31.0%	18.0%	23.0%	23.0%	18.0%	20.0%	26.0%	24.0%	17.0%
				Ad													
(4) 4	38	4	5	20	9	36	1	1	0	12	17	9	3	4	10	12	9
	8.0%	5.0%	6.0%	10.0%	10.0%	9.0%	4.0%	8.0%	-	9.0%	7.0%	10.0%	5.0%	5.0%	8.0%	14.0%	8.0%
																m	
(8) 5 or more	28	7	3	11	7	25	0	2	1	14	10	4	4	3	4	4	13
	6.0%	8.0%	4.0%	6.0%	8.0%	6.0%	-	17.0%	8.0%	10.0%	4.0%	5.0%	7.0%	4.0%	3.0%	5.0%	12.0%
Sigma										J							mNo
	451	85	82	196	88	403	23	12	13	136	229	86	57	74	124	86	110
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Mean	2.46	2.38	2.26	2.55	2.52	2.45	2.09	3.08	2.69	2.68	2.32	2.45	2.33	2.24	2.31	2.58	2.74
										J							mn
Std Dev	1.7	1.89	1.42	1.63	1.88	1.71	0.9	2.43	1.7	2.02	1.52	1.55	1.8	1.47	1.4	1.55	2.14
Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing																	

5C. HOUSEPLANT INSECTICIDES

OVERVIEW

Twenty-eight percent of the respondents report purchasing a houseplant insecticide in 2016. Overall, 57% of the analyzed respondents indicate that they do not purchase houseplant insecticides.

Table 5C-1: When was the Last Time You Bought Each of the Following Products? "Houseplant insecticides"

	Total	Region				Dwelling				Population density			Family income				
		Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: All Respondents	1498	290	357	571	280	1328	55*	58*	57*	369	769	360	269	321	370	254	284
	424	71	87	187	79	374	21	16	13	136	198	90	62	84	93	82	103
Top 2 Box (Net)	28.0%	24.0%	24.0%	33.0%	28.0%	28.0%	38.0%	28.0%	23.0%	37.0%	26.0%	25.0%	23.0%	26.0%	25.0%	32.0%	36.0%
				AB			h			JK						Ln	LMN
	202	33	38	96	35	179	8	8	7	72	90	40	31	39	51	38	43
Less than 6 months ago	13.0%	11.0%	11.0%	17.0%	13.0%	13.0%	15.0%	14.0%	12.0%	20.0%	12.0%	11.0%	12.0%	12.0%	14.0%	15.0%	15.0%
				AB						JK							
	222	38	49	91	44	195	13	8	6	64	108	50	31	45	42	44	60
6 months to 1 year ago	15.0%	13.0%	14.0%	16.0%	16.0%	15.0%	24.0%	14.0%	11.0%	17.0%	14.0%	14.0%	12.0%	14.0%	11.0%	17.0%	21.0%
							eh									IN	LMN
	1074	219	270	384	201	954	34	42	44	233	571	270	207	237	277	172	181
Bottom 2 Box (Net)	72.0%	76.0%	76.0%	67.0%	72.0%	72.0%	62.0%	72.0%	77.0%	63.0%	74.0%	75.0%	77.0%	74.0%	75.0%	68.0%	64.0%
		C	C						f		I	I	OP	P	oP		
	218	42	49	78	49	191	7	7	13	46	124	48	31	43	61	35	48
More than 1 year ago	15.0%	14.0%	14.0%	14.0%	18.0%	14.0%	13.0%	12.0%	23.0%	12.0%	16.0%	13.0%	12.0%	13.0%	16.0%	14.0%	17.0%
									e						I		I
	856	177	221	306	152	763	27	35	31	187	447	222	176	194	216	137	133
Do not use product	57.0%	61.0%	62.0%	54.0%	54.0%	57.0%	49.0%	60.0%	54.0%	51.0%	58.0%	62.0%	65.0%	60.0%	58.0%	54.0%	47.0%
		C	Cd								I	I	nOP	P	P		
Sigma	1498	290	357	571	280	1328	55	58	57	369	769	360	269	321	370	254	284
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base																	

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base

GEOGRAPHIC REGION

Regionally, the use of houseplant insecticides does not vary much across the different geographic regions, with the South as the highest, reporting 33%, and the Northeast and Midwest at the lowest, each with 24% of respondents reporting purchase.

POPULATION DENSITY

Overall, 37% of urban respondents reported purchasing houseplant insecticides, while 26% of suburban and 25% of rural respondents report using them.

FAMILY INCOME

With regard to household incomes, those with incomes higher than \$100,000 were more likely to purchase houseplant insecticides (36%), while only 23% of those respondents with incomes lower than \$25,000 reported purchase.

BRAND RECOLLECTION

Miracle-Gro Nature's Care Insecticidal Soap is the most frequently recollected brand, accounting for 38% of the responses in 2016. Bayer Advanced Insect Control Plus Fertilizer and Bayer Advanced Natria rank second and third with 16% and 13%, respectively. Schultz Houseplant & Indoor Garden Insect Spray ranks fourth with 12%. The two Safer products indicated—Houseplant Sticky Stakes and Insect Killing Soap—have a combined purchase incidence of 22%.

Table 5C.2: What Brands of Houseplant Insecticides do you Purchase? If Possible, Please Refer to the Columnar

	Total	Region				Dwelling				Population density				Family income			
		Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used Houseplant Insecticides in the Past Year	424	71*	87*	187	79*	374	21**	16**	13**	136	198	90*	62*	84*	93*	82*	103
Miracle Gro Nature's Care Insecticidal Soap	160	23	33	76	28	140	7	8	5	51	73	36	26	26	39	30	39
	38.0%	32.0%	38.0%	41.0%	35.0%	37.0%	33.0%	50.0%	38.0%	38.0%	37.0%	40.0%	42.0%	31.0%	42.0%	37.0%	38.0%
Bayer Advanced Insect Control Plus Fertilizer	67	9	12	34	12	58	7	0	2	27	35	5	8	8	20	12	19
	16.0%	13.0%	14.0%	18.0%	15.0%	16.0%	33.0%	-	15.0%	20.0%	18.0%	6.0%	13.0%	10.0%	22.0%	15.0%	18.0%
										K	K				M		m
Bayer Advanced Natria	55	12	11	22	10	51	2	2	0	29	22	4	8	6	19	10	12
	13.0%	17.0%	13.0%	12.0%	13.0%	14.0%	10.0%	13.0%	-	21.0%	11.0%	4.0%	13.0%	7.0%	20.0%	12.0%	12.0%
										JK	k				MP		
Schultz Houseplant & Indoor Garden Insect Spray	51	10	7	24	10	50	1	0	0	22	21	8	5	8	12	13	13
	12.0%	14.0%	8.0%	13.0%	13.0%	13.0%	5.0%	-	-	16.0%	11.0%	9.0%	8.0%	10.0%	13.0%	16.0%	13.0%
Safer Houseplant Sticky Stakes	48	6	7	21	14	38	5	4	1	22	23	3	10	7	10	6	15
	11.0%	8.0%	8.0%	11.0%	18.0%	10.0%	24.0%	25.0%	8.0%	16.0%	12.0%	3.0%	16.0%	8.0%	11.0%	7.0%	15.0%
					ab					K	K		o				
Safer Insect Killing Soap	46	8	7	20	11	45	1	0	0	16	24	6	2	7	11	14	12
	11.0%	11.0%	8.0%	11.0%	14.0%	12.0%	5.0%	-	-	12.0%	12.0%	7.0%	3.0%	8.0%	12.0%	17.0%	12.0%
															l	Lm	l
Garden Safe Houseplant and Garden Insect Killer	46	8	6	21	11	40	2	2	2	22	17	7	9	6	12	8	11
	11.0%	11.0%	7.0%	11.0%	14.0%	11.0%	10.0%	13.0%	15.0%	16.0%	9.0%	8.0%	15.0%	7.0%	13.0%	10.0%	11.0%
										JK							
Spectrum Houseplant & Garden Insect Spray	42	6	7	25	4	36	2	1	3	10	20	12	5	12	11	8	6
	10.0%	8.0%	8.0%	13.0%	5.0%	10.0%	10.0%	6.0%	23.0%	7.0%	10.0%	13.0%	8.0%	14.0%	12.0%	10.0%	6.0%
					D									p			
Bonide Systemic Houseplant Insect Control	28	4	6	9	9	26	2	0	0	8	19	1	3	2	9	8	6
	7.0%	6.0%	7.0%	5.0%	11.0%	7.0%	10.0%	-	-	6.0%	10.0%	1.0%	5.0%	2.0%	10.0%	10.0%	6.0%
					c					k	K				M	M	
Other	5	1	1	1	2	4	0	0	1	1	2	2	1	3	0	0	1
	1.0%	1.0%	1.0%	1.0%	3.0%	1.0%	-	-	8.0%	1.0%	1.0%	2.0%	2.0%	4.0%	-	-	1.0%
														no			
Don't know	43	7	12	18	6	37	0	4	2	7	20	16	8	12	7	9	7
	10.0%	10.0%	14.0%	10.0%	8.0%	10.0%	-	25.0%	15.0%	5.0%	10.0%	18.0%	13.0%	14.0%	8.0%	11.0%	7.0%
												IJ		p			
Sigma	591	94	109	271	117	525	29	21	16	215	276	100	85	97	150	118	141
	139.0%	132.0%	125.0%	145.0%	148.0%	140.0%	138.0%	131.0%	123.0%	158.0%	139.0%	111.0%	137.0%	115.0%	161.0%	144.0%	137.0%

Proportions/Means: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

PRODUCT FORM

Aerosol spray, liquid concentrates, and ready-to-use (RTU) with trigger spray are the most common product forms of houseplant insecticides used, with 30%, 28%, and 24% respondents, respectively, reporting their purchase. Regionally, there is not much variation in the purchase of aerosol sprays, while RTU products with trigger spray range from 18% in the Northeast to 34% in the West.

Table 5C-3: What Form was the Houseplant Insecticides?

	Region					Dwelling			Population density			Family income					
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
Base: Have Used Houseplant Insecticides in the Past Year	424	71*	87*	187	79*	374	21**	16**	13**	136	198	90*	62*	84*	93*	82*	103
Aerosol Spray	129 30.0%	20 28.0%	26 30.0%	60 32.0%	23 29.0%	115 31.0%	4 19.0%	6 38.0%	4 31.0%	45 33.0%	61 31.0%	23 26.0%	18 29.0%	21 25.0%	31 33.0%	24 29.0%	35 34.0%
Ready-to-use (RTU) with trigger spray	120 28.0%	13 18.0%	25 29.0%	55 29.0%	27 34.0%	99 26.0%	8 38.0%	8 50.0%	5 38.0%	40 29.0%	57 29.0%	23 26.0%	18 29.0%	22 26.0%	23 25.0%	26 32.0%	31 30.0%
Liquid concentrate	101 24.0%	19 27.0%	16 18.0%	43 23.0%	23 29.0%	91 24.0%	6 29.0%	3 19.0%	1 8.0%	36 26.0%	43 22.0%	22 24.0%	12 19.0%	21 25.0%	28 30.0%	21 26.0%	19 18.0%
Granules	78 18.0%	15 21.0%	14 16.0%	32 17.0%	17 22.0%	71 19.0%	3 14.0%	1 6.0%	3 23.0%	32 24.0%	36 18.0%	10 11.0%	8 13.0%	9 11.0%	19 20.0%	19 23.0%	23 22.0%
Dust	59 14.0%	9 13.0%	15 17.0%	25 13.0%	10 13.0%	55 15.0%	2 10.0%	1 6.0%	1 8.0%	25 18.0%	24 12.0%	10 11.0%	12 19.0%	9 11.0%	14 15.0%	10 12.0%	14 14.0%
Water soluble powder	40 9.0%	7 10.0%	7 8.0%	21 11.0%	5 6.0%	34 9.0%	4 19.0%	2 13.0%	0 -	15 11.0%	19 10.0%	6 7.0%	7 11.0%	9 11.0%	9 10.0%	6 7.0%	9 9.0%
RTU liquid with hose sprayer	31 7.0%	5 7.0%	5 6.0%	16 9.0%	5 6.0%	30 8.0%	1 5.0%	0 -	0 -	14 10.0%	13 7.0%	4 4.0%	3 5.0%	3 4.0%	8 9.0%	8 10.0%	9 9.0%
Other	1 0	0 -	1 1.0%	0 -	0 -	0 -	0 -	0 -	1 8.0%	0 -	0 -	1 1.0%	1 2.0%	0 -	0 -	0 -	0 -
Don't know	20 5.0%	4 6.0%	4 5.0%	10 5.0%	2 3.0%	18 5.0%	0 -	2 13.0%	0 -	2 1.0%	10 5.0%	8 9.0%	3 5.0%	5 6.0%	7 8.0%	4 5.0%	1 1.0%
Sigma	579 137.0%	92 130.0%	113 130.0%	262 140.0%	112 142.0%	513 137.0%	28 133.0%	23 144.0%	15 115.0%	209 154.0%	263 133.0%	107 119.0%	82 132.0%	99 118.0%	139 149.0%	118 144.0%	141 137.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

RETAIL OUTLET

Houseplant insecticides are most frequently purchased at discount or mass merchandise stores, accounting for 32% of the responses in 2016. Purchases at home improvement centers are reported at 30%. Purchases at discount or mass-merchandise stores are greater among respondents with lower income levels, while purchases at home improvement centers are higher among the middle and high income levels.

PRODUCT USAGE

Houseplant insecticides are purchased to control many different pests, including mites with 36%, spider mites with 33%, white flies with 31%, aphids with 29%, and mealy bugs with 25%. Houseplant insecticides are commonly purchased to treat more than one type of pest.

Table 5C-4: What Place are Each of the Following Purchased Most Often? "Houseplant Insecticides"

	Region				Dwelling				Population density			Family income					
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used 'Houseplant insecticides' in Past Year	424	71*	87*	187	79*	374	21**	16**	13**	136	198	90*	62*	84*	93*	82*	103
Discount/mass merchandise store (e.g. Wal-Mart, Kmart)	137	20	35	56	26	117	5	9	6	39	54	44	27	38	25	17	30
	32.0%	28.0%	40.0%	30.0%	33.0%	31.0%	24.0%	56.0%	46.0%	29.0%	27.0%	49.0%	44.0%	45.0%	27.0%	21.0%	29.0%
Home improvement center (e.g. Home Depot, Lowes)	128	18	27	63	20	117	5	3	3	42	64	22	13	19	25	36	35
	30.0%	25.0%	31.0%	34.0%	25.0%	31.0%	24.0%	19.0%	23.0%	31.0%	32.0%	24.0%	21.0%	23.0%	27.0%	44.0%	34.0%
Lawn and garden center/nursery	34	12	5	10	7	30	3	1	0	14	16	4	6	5	12	4	7
	8.0%	17.0%	6.0%	5.0%	9.0%	8.0%	14.0%	6.0%	-	10.0%	8.0%	4.0%	10.0%	6.0%	13.0%	5.0%	7.0%
Hardware store (e.g. True Value)	26	4	4	16	2	24	2	0	0	8	14	4	3	6	5	8	4
	6.0%	6.0%	5.0%	9.0%	3.0%	6.0%	10.0%	-	-	6.0%	7.0%	4.0%	5.0%	7.0%	5.0%	10.0%	4.0%
Warehouse/wholesale club	25	5	5	5	10	24	1	0	0	8	11	6	2	5	5	7	6
	6.0%	7.0%	6.0%	3.0%	13.0%	6.0%	5.0%	-	-	6.0%	6.0%	7.0%	3.0%	6.0%	5.0%	9.0%	6.0%
Farm supply store	19	4	1	12	2	17	1	0	1	8	7	4	3	2	7	3	4
	4.0%	6.0%	1.0%	6.0%	3.0%	5.0%	5.0%	-	8.0%	6.0%	4.0%	4.0%	5.0%	2.0%	8.0%	4.0%	4.0%
Supermarket/grocery store	18	2	6	9	1	15	0	1	2	6	12	0	5	1	3	2	7
	4.0%	3.0%	7.0%	5.0%	1.0%	4.0%	-	6.0%	15.0%	4.0%	6.0%	-	8.0%	1.0%	3.0%	2.0%	7.0%
Mail order/catalog	17	2	1	4	10	13	3	1	0	6	10	1	1	2	6	3	5
	4.0%	3.0%	1.0%	2.0%	13.0%	3.0%	14.0%	6.0%	-	4.0%	5.0%	1.0%	2.0%	2.0%	6.0%	4.0%	5.0%
Other	8	2	0	5	1	8	0	0	0	2	5	1	0	2	2	1	3
	2.0%	3.0%	-	3.0%	1.0%	2.0%	-	-	-	1.0%	3.0%	1.0%	-	2.0%	2.0%	1.0%	3.0%
Don't know	12	2	3	7	0	9	1	1	1	3	5	4	2	4	3	1	2
	3.0%	3.0%	3.0%	4.0%	-	2.0%	5.0%	6.0%	8.0%	2.0%	3.0%	4.0%	3.0%	5.0%	3.0%	1.0%	2.0%
Sigma	424	71	87	187	79	374	21	16	13	136	198	90	62	84	93	82	103
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

Table 5C-5: What Problem Were You Trying to Eliminate?

	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used Houseplant Insecticides in the Past Year	424	71*	87*	187	79*	374	21**	16**	13**	136	198	90*	62*	84*	93*	82*	103
Mites	154	24	26	73	31	140	3	7	4	58	69	27	19	26	36	33	40
	36.0%	34.0%	30.0%	39.0%	39.0%	37.0%	14.0%	44.0%	31.0%	43.0%	35.0%	30.0%	31.0%	31.0%	39.0%	40.0%	39.0%
										k							
Spider Mites	141	25	29	66	21	128	5	6	2	55	55	31	23	24	37	28	29
	33.0%	35.0%	33.0%	35.0%	27.0%	34.0%	24.0%	38.0%	15.0%	40.0%	28.0%	34.0%	37.0%	29.0%	40.0%	34.0%	28.0%
										j					p		
White Flies, Flies	132	20	27	57	28	117	7	2	6	44	62	26	19	24	35	25	29
	31.0%	28.0%	31.0%	30.0%	35.0%	31.0%	33.0%	13.0%	46.0%	32.0%	31.0%	29.0%	31.0%	29.0%	38.0%	30.0%	28.0%
Aphids	122	13	24	51	34	109	6	5	2	35	60	27	15	25	23	23	36
	29.0%	18.0%	28.0%	27.0%	43.0%	29.0%	29.0%	31.0%	15.0%	26.0%	30.0%	30.0%	24.0%	30.0%	25.0%	28.0%	35.0%
Mealy bugs				ABC													
	104	24	14	46	20	91	9	1	3	37	52	15	15	11	27	23	28
	25.0%	34.0%	16.0%	25.0%	25.0%	24.0%	43.0%	6.0%	23.0%	27.0%	26.0%	17.0%	24.0%	13.0%	29.0%	28.0%	27.0%
Scale		B								k	k		m		M	M	M
	42	7	6	20	9	39	2	1	0	20	18	4	6	6	12	7	11
	10.0%	10.0%	7.0%	11.0%	11.0%	10.0%	10.0%	6.0%	-	15.0%	9.0%	4.0%	10.0%	7.0%	13.0%	9.0%	11.0%
Other										K							
	5	1	1	2	1	4	0	0	1	1	3	1	2	1	1	0	1
	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	-	-	8.0%	1.0%	2.0%	1.0%	3.0%	1.0%	1.0%	-	1.0%
Don't know	50	8	15	21	6	39	2	6	3	11	23	16	11	12	11	9	7
	12.0%	11.0%	17.0%	11.0%	8.0%	10.0%	10.0%	38.0%	23.0%	8.0%	12.0%	18.0%	18.0%	14.0%	12.0%	11.0%	7.0%
			d									l	P	p			
Sigma	750	122	142	336	150	667	34	28	21	261	342	147	110	129	182	148	181
	177.0%	172.0%	163.0%	180.0%	190.0%	178.0%	162.0%	175.0%	162.0%	192.0%	173.0%	163.0%	177.0%	154.0%	196.0%	180.0%	176.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

5D. HOUSEHOLD INSECTICIDES

OVERVIEW

Overall, approximately 48% of the respondents report purchasing household insecticides in 2016. Thirty-seven percent of the analyzed respondents indicate that they did not use household insecticides in 2016.

Table 5D-1: When was the Last Time you Bought Each of the Following Products? Household Insecticides

	Total	Region				Dwelling			Population density				Family income				
		Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: All Respondents	1498	290	357	571	280	1328	55*	58*	57*	369	769	360	269	321	370	254	284
	721	122	161	315	123	638	31	25	27	179	366	176	114	158	180	126	143
Top 2 Box (Net)	48.0%	42.0%	45.0%	55.0%	44.0%	48.0%	56.0%	43.0%	47.0%	49.0%	48.0%	49.0%	42.0%	49.0%	49.0%	50.0%	50.0%
				ABD										I		I	I
	355	46	80	166	63	309	19	14	13	98	172	85	60	76	87	63	69
Less than 6 months ago	24.0%	16.0%	22.0%	29.0%	23.0%	23.0%	35.0%	24.0%	23.0%	27.0%	22.0%	24.0%	22.0%	24.0%	24.0%	25.0%	24.0%
			A	ABD	A		e										
	366	76	81	149	60	329	12	11	14	81	194	91	54	82	93	63	74
6 months to 1 year ago	24.0%	26.0%	23.0%	26.0%	21.0%	25.0%	22.0%	19.0%	25.0%	22.0%	25.0%	25.0%	20.0%	26.0%	25.0%	25.0%	26.0%
																	I
	777	168	196	256	157	690	24	33	30	190	403	184	155	163	190	128	141
Bottom 2 Box (Net)	52.0%	58.0%	55.0%	45.0%	56.0%	52.0%	44.0%	57.0%	53.0%	51.0%	52.0%	51.0%	58.0%	51.0%	51.0%	50.0%	50.0%
		C	C		C								mop				
	225	52	46	77	50	200	9	6	10	50	129	46	20	46	66	39	54
More than 1 year ago	15.0%	18.0%	13.0%	13.0%	18.0%	15.0%	16.0%	10.0%	18.0%	14.0%	17.0%	13.0%	7.0%	14.0%	18.0%	15.0%	19.0%
		bc			bc						k			L	L	L	L
	552	116	150	179	107	490	15	27	20	140	274	138	135	117	124	89	87
Do not use product	37.0%	40.0%	42.0%	31.0%	38.0%	37.0%	27.0%	47.0%	35.0%	38.0%	36.0%	38.0%	50.0%	36.0%	34.0%	35.0%	31.0%
		C	C		C			F					MNOP				
	1498	290	357	571	280	1328	55	58	57	369	769	360	269	321	370	254	284
Sigma	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Proportions/Mean: Columns Tested: (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base																	

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base

GEOGRAPHIC REGION

Household insecticides are used in varying degrees across the United States. Regionally, respondents in the South report the greatest incidence of purchase, with 55%, and respondents in the Northeast report the lowest incidence of purchase, with 42%.

POPULATION DENSITY

There was not a significant difference between respondents in rural, urban, and suburban areas. Urban and rural areas report 49% and suburban respondents report a 48% incidence of purchase in 2016.

FAMILY INCOME

With regard to income levels, respondents with higher income levels are more likely to use household insecticides (50%) than those with income levels under \$25,000. Respondents with an income lower than \$25,000 used household insecticides the least, with 42% reporting usage.

BRAND RECOLLECTION

Overall, 55% of respondents identify Raid as the brand of household insecticide they most recently purchased, with 16% attributable to Raid Ant & Roach Killer, 9% attributable to Raid Indoor Home, 8% attributable to Raid Flying Insect killer, 5% attributable to Raid One Shot, 4% attributable to Raid Max Bug Barrier, 4% attributable to Raid Max Roach Killer, 3% attributable to "Raid Other Products", 3% attributable to Raid Exterminator, 2% attributable to Raid Cockroach Bait, and 1% attributable to Raid Earth Options. Black Flag is the second largest brand, accounting for 25% of responses. Ortho is the third largest identified brand with 22% of responses, with Ortho Home Defense Max accounting for 10%.

Table 5D-2: What Brand(s) of Household Insecticides did you Purchase? If Possible, Please Refer to the Container

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Black Flag Home Insect Control	41	4	6	21	10	40	0	1	0	17	19	5	3	7	9	8	14
	6.0%	3.0%	4.0%	7.0%	8.0%	6.0%	-	4.0%	-	9.0%	5.0%	3.0%	3.0%	4.0%	5.0%	6.0%	10.0%
Combat Max Ant Bait	39	9	8	17	5	35	1	2	1	12	18	9	2	8	9	12	8
	5.0%	7.0%	5.0%	5.0%	4.0%	5.0%	3.0%	8.0%	4.0%	7.0%	5.0%	5.0%	2.0%	5.0%	5.0%	10.0%	6.0%
Ortho Ant & Roach Killer	39	5	7	21	6	34	0	1	4	10	19	10	4	11	12	5	7
	5.0%	4.0%	4.0%	7.0%	5.0%	5.0%	-	4.0%	15.0%	6.0%	5.0%	6.0%	4.0%	7.0%	7.0%	4.0%	5.0%
Raid One Shot	35	5	11	15	4	30	1	3	1	9	17	9	3	9	11	4	8
	5.0%	4.0%	7.0%	5.0%	3.0%	5.0%	3.0%	12.0%	4.0%	5.0%	5.0%	5.0%	3.0%	6.0%	6.0%	3.0%	6.0%
Terro Ant Killer	33	1	10	11	11	31	1	0	1	5	12	16	6	8	5	8	6
	5.0%	1.0%	6.0%	3.0%	9.0%	5.0%	3.0%	-	4.0%	3.0%	3.0%	9.0%	5.0%	5.0%	3.0%	6.0%	4.0%
Black Flag Extreme Home Insect Control	30	5	3	15	7	28	0	1	1	11	13	6	6	5	7	4	8
	4.0%	4.0%	2.0%	5.0%	6.0%	4.0%	-	4.0%	4.0%	6.0%	4.0%	3.0%	5.0%	3.0%	4.0%	3.0%	6.0%
Bayer Advanced Natria Home Pest Control	29	5	8	8	8	26	3	0	0	13	14	2	3	4	9	4	9
	4.0%	4.0%	5.0%	3.0%	7.0%	4.0%	10.0%	-	-	7.0%	4.0%	1.0%	3.0%	3.0%	5.0%	3.0%	6.0%
Raid Max Bug Barrier	28	3	6	14	5	25	1	2	0	10	14	4	6	5	7	4	6
	4.0%	2.0%	4.0%	4.0%	4.0%	4.0%	3.0%	8.0%	-	6.0%	4.0%	2.0%	5.0%	3.0%	4.0%	3.0%	4.0%
Raid Max Roach Killer	28	3	4	19	2	22	3	1	2	9	15	4	6	8	11	1	2
	4.0%	2.0%	2.0%	6.0%	2.0%	3.0%	10.0%	4.0%	7.0%	5.0%	4.0%	2.0%	5.0%	5.0%	6.0%	1.0%	1.0%

(Continued)

Table 5D-2: What Brand(s) of Household Insecticides did you Purchase? If Possible, Please Refer to the Container

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Bengal Insecticide Concentrate	27	6	3	14	4	25	2	0	0	14	10	3	2	6	9	3	7
	4.0%	5.0%	2.0%	4.0%	3.0%	4.0%	6.0%	-	-	8.0%	3.0%	2.0%	2.0%	4.0%	5.0%	2.0%	5.0%
										JK							
Raid OTHER PRODUCT	25	7	5	11	2	19	2	1	3	5	18	2	6	6	8	1	4
	3.0%	6.0%	3.0%	3.0%	2.0%	3.0%	6.0%	4.0%	11.0%	3.0%	5.0%	1.0%	5.0%	4.0%	4.0%	1.0%	3.0%
		d									K		O		o		
Raid Exterminator	25	7	2	13	3	19	3	2	1	10	13	2	0	2	12	5	6
	3.0%	6.0%	1.0%	4.0%	2.0%	3.0%	10.0%	8.0%	4.0%	6.0%	4.0%	1.0%	-	1.0%	7.0%	4.0%	4.0%
		B		b			E			K					LM	L	L
Bengal Flying Insect Killer	23	6	1	12	4	20	2	1	0	8	14	1	2	6	8	3	4
	3.0%	5.0%	1.0%	4.0%	3.0%	3.0%	6.0%	4.0%	-	4.0%	4.0%	1.0%	2.0%	4.0%	4.0%	2.0%	3.0%
		B		B	b					K	K						
Hot Shot Indoor Insect Fogger	22	5	3	10	4	19	0	1	2	4	11	7	1	5	6	2	8
	3.0%	4.0%	2.0%	3.0%	3.0%	3.0%	-	4.0%	7.0%	2.0%	3.0%	4.0%	1.0%	3.0%	3.0%	2.0%	6.0%
																	Lo
Combat Max Roach Gel	22	0	2	16	4	19	0	1	2	8	8	6	7	7	3	1	4
	3.0%	-	1.0%	5.0%	3.0%	3.0%	-	4.0%	7.0%	4.0%	2.0%	3.0%	6.0%	4.0%	2.0%	1.0%	3.0%
				AB	A								NO	o			
Bonide Cyper 8	21	2	4	8	7	19	2	0	0	8	12	1	1	2	8	7	3
	3.0%	2.0%	2.0%	3.0%	6.0%	3.0%	6.0%	-	-	4.0%	3.0%	1.0%	1.0%	1.0%	4.0%	6.0%	2.0%
					a					K	k				lm	LM	
Spectracide Bug Stop	21	2	4	9	6	20	1	0	0	5	9	7	2	3	10	3	3
	3.0%	2.0%	2.0%	3.0%	5.0%	3.0%	3.0%	-	-	3.0%	2.0%	4.0%	2.0%	2.0%	6.0%	2.0%	2.0%
															m		
Ortho Flying Insect Killer	21	6	4	8	3	19	0	1	1	6	10	5	0	7	8	2	4
	3.0%	5.0%	2.0%	3.0%	2.0%	3.0%	-	4.0%	4.0%	3.0%	3.0%	3.0%	-	4.0%	4.0%	2.0%	3.0%
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(Continued)

Table 5D-2: What Brand(s) of Household Insecticides did you Purchase? If Possible, Please Refer to the Container

	Region					Dwelling			Mobile home/trailer	Population density			Family income				
	Total	Northeast	Midwest	South	West	One- family house	Two- family house	Three+ family house		Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
EcoSmart Home Pest Control	18	1	2	12	3	16	1	1	0	6	8	4	5	3	3	4	3
	2.0%	1.0%	1.0%	4.0%	2.0%	3.0%	3.0%	4.0%	-	3.0%	2.0%	2.0%	4.0%	2.0%	2.0%	3.0%	2.0%
Raid Cockroach Bait	18	3	2	9	4	16	0	2	0	9	6	3	0	3	8	5	2
	2.0%	2.0%	1.0%	3.0%	3.0%	3.0%	-	8.0%	-	5.0%	2.0%	2.0%	-	2.0%	4.0%	4.0%	1.0%
Combat Max Defense System	18	0	4	10	4	14	0	3	1	4	10	4	5	3	5	1	4
	2.0%	-	2.0%	3.0%	3.0%	2.0%	-	12.0%	4.0%	2.0%	3.0%	2.0%	4.0%	2.0%	3.0%	1.0%	3.0%
Ortho Ant & Roach	16	3	2	8	3	11	1	2	2	5	6	5	4	2	5	3	2
	2.0%	2.0%	1.0%	3.0%	2.0%	2.0%	3.0%	8.0%	7.0%	3.0%	2.0%	3.0%	4.0%	1.0%	3.0%	2.0%	1.0%
Hot Shot MaxAttrax Ant	16	2	3	9	2	11	3	0	2	6	6	4	4	1	7	3	1
	2.0%	2.0%	2.0%	3.0%	2.0%	2.0%	10.0%	-	7.0%	3.0%	2.0%	2.0%	4.0%	1.0%	4.0%	2.0%	1.0%
Hot Shot Natural Home Insect Control	15	2	3	7	3	15	0	0	0	2	9	4	2	4	5	0	4
	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	-	-	-	1.0%	2.0%	2.0%	2.0%	3.0%	3.0%	-	3.0%
Combat OTHER PRODUCT	15	2	0	5	8	10	1	4	0	4	8	3	1	4	5	1	4
	2.0%	2.0%	-	2.0%	7.0%	2.0%	3.0%	16.0%	-	2.0%	2.0%	2.0%	1.0%	3.0%	3.0%	1.0%	3.0%
Terro Spider Killer	12	2	3	3	4	11	1	0	0	4	4	4	4	1	2	1	4
	2.0%	2.0%	2.0%	1.0%	3.0%	2.0%	3.0%	-	-	2.0%	1.0%	2.0%	4.0%	1.0%	1.0%	1.0%	3.0%
Bonide Home Insect Control	11	2	3	5	1	10	1	0	0	5	5	1	2	1	3	4	1
	2.0%	2.0%	2.0%	2.0%	1.0%	2.0%	3.0%	-	-	3.0%	1.0%	1.0%	2.0%	1.0%	2.0%	3.0%	1.0%

(Continued)

Table 5D-2: What Brand(s) of Household Insecticides did you Purchase? If Possible, Please Refer to the Container																	
	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Hot Shot OTHER PRODUCT	11	0	3	4	4	8	1	0	2	3	2	6	2	4	3	1	1
	2.0%	-	2.0%	1.0%	3.0%	1.0%	3.0%	-	7.0%	2.0%	1.0%	3.0%	2.0%	3.0%	2.0%	1.0%	1.0%
	A									J							
Grant's Kills Ants	10	1	2	3	4	9	0	1	0	1	6	3	2	4	2	1	1
	1.0%	1.0%	1.0%	1.0%	3.0%	1.0%	-	4.0%	-	1.0%	2.0%	2.0%	2.0%	3.0%	1.0%	1.0%	1.0%
	c																
Ortho Bedbug Spray	10	2	0	5	3	8	1	1	0	4	4	2	1	2	4	1	2
	1.0%	2.0%	-	2.0%	2.0%	1.0%	3.0%	4.0%	-	2.0%	1.0%	1.0%	1.0%	1.0%	2.0%	1.0%	1.0%
	B																
Roach Prufe	9	1	2	4	2	8	0	1	0	2	6	1	0	3	4	1	1
	1.0%	1.0%	1.0%	1.0%	2.0%	1.0%	-	4.0%	-	1.0%	2.0%	1.0%	-	2.0%	2.0%	1.0%	1.0%
Enforcer Home Pest Control	9	2	2	1	4	9	0	0	0	1	5	3	0	3	2	0	4
	1.0%	2.0%	1.0%	0	3.0%	1.0%	-	-	-	1.0%	1.0%	2.0%	-	2.0%	1.0%	-	3.0%
	C												lo				
Hot Shot MaxAttrax Roach	9	1	0	6	2	9	0	0	0	4	3	2	2	4	2	1	0
	1.0%	1.0%	-	2.0%	2.0%	1.0%	-	-	-	2.0%	1.0%	1.0%	2.0%	3.0%	1.0%	1.0%	-
	b												p				
Ortho OTHER PRODUCT	9	3	0	3	3	9	0	0	0	4	5	0	0	1	3	1	4
	1.0%	2.0%	-	1.0%	2.0%	1.0%	-	-	-	2.0%	1.0%	-	-	1.0%	2.0%	1.0%	3.0%
	B					B				K			I				
Terro Home Insect Killer	8	0	4	2	2	6	2	0	0	2	3	3	1	0	4	1	2
	1.0%	-	2.0%	1.0%	2.0%	1.0%	6.0%	-	-	1.0%	1.0%	2.0%	1.0%	-	2.0%	1.0%	1.0%
	ac					E							m				
Eliminator Indoor Fogger	8	0	1	5	2	8	0	0	0	4	2	2	1	4	2	0	1
	1.0%	-	1.0%	2.0%	2.0%	1.0%	-	-	-	2.0%	1.0%	1.0%	1.0%	3.0%	1.0%	-	1.0%
										J			o				
(Continued)																	



Table 5D-2: What Brand(s) of Household Insecticides did you Purchase? If Possible, Please Refer to the Container

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Hot Shot No Mess Fogger	8	2	1	3	2	8	0	0	0	3	3	2	3	2	2	0	1
	1.0%	2.0%	1.0%	1.0%	2.0%	1.0%	-	-	-	2.0%	1.0%	1.0%	3.0%	1.0%	1.0%	-	1.0%
													0				
Raid Earth Options	6	2	0	3	1	5	1	0	0	3	2	1	1	0	5	0	0
	1.0%	2.0%	-	1.0%	1.0%	1.0%	3.0%	-	-	2.0%	1.0%	1.0%	1.0%	-	3.0%	-	-
Enforcer Bug Max	6	2	1	0	3	5	1	0	0	3	3	0	0	2	3	0	1
	1.0%	2.0%	1.0%	-	2.0%	1.0%	3.0%	-	-	2.0%	1.0%	-	-	1.0%	2.0%	-	1.0%
		C			C					k							
Bonide Household Insect Killer	5	1	0	2	2	5	0	0	0	3	1	1	1	0	3	1	0
	1.0%	1.0%	-	1.0%	2.0%	1.0%	-	-	-	2.0%	0	1.0%	1.0%	-	2.0%	1.0%	-
										j							
EcoSmart Spider Blaster	5	1	0	2	2	5	0	0	0	2	3	0	0	1	2	1	1
	1.0%	1.0%	-	1.0%	2.0%	1.0%	-	-	-	1.0%	1.0%	-	-	1.0%	1.0%	1.0%	1.0%
Termite Prufe	5	2	1	1	1	5	0	0	0	1	4	0	1	0	2	2	0
	1.0%	2.0%	1.0%	0	1.0%	1.0%	-	-	-	1.0%	1.0%	-	1.0%	-	1.0%	2.0%	-
Enforcer 20second Roach Killer	4	1	0	0	3	4	0	0	0	1	3	0	0	0	2	0	2
	1.0%	1.0%	-	-	2.0%	1.0%	-	-	-	1.0%	1.0%	-	-	-	1.0%	-	1.0%
					BC												
Enforcer Roach Ridd	4	0	1	2	1	4	0	0	0	4	0	0	2	0	1	1	0
	1.0%	-	1.0%	1.0%	1.0%	1.0%	-	-	-	2.0%	-	-	2.0%	-	1.0%	1.0%	-
										JK			m				
Safer Diatomaceous Earth	4	0	1	1	2	4	0	0	0	2	1	1	1	1	2	0	0
	1.0%	-	1.0%	0	2.0%	1.0%	-	-	-	1.0%	0	1.0%	1.0%	1.0%	1.0%	-	-

(Continued)

Table 5D-2: What Brand(s) of Household Insecticides did you Purchase? If Possible, Please Refer to the Container																	
	Region					Dwelling			Mobile home/trailer	Population density			Family income				
	Total	Northeast	Midwest	South	West	One- family house	Two- family house	Three- family house		Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Concern Home Pest Control	4	0	1	1	2	4	0	0	0	3	1	0	0	0	2	1	1
	1.0%	-	1.0%	0	2.0%	1.0%	-	-	-	2.0%	0	-	-	-	1.0%	1.0%	1.0%
jk																	
JT Eaton Kills Bedbugs	3	0	1	1	1	3	0	0	0	1	2	0	0	0	2	1	0
	0	-	1.0%	0	1.0%	0	-	-	-	1.0%	1.0%	-	-	-	1.0%	1.0%	-
Mycodex	3	1	0	1	1	3	0	0	0	2	1	0	1	0	2	0	0
	0	1.0%	-	0	1.0%	0	-	-	-	1.0%	0	-	1.0%	-	1.0%	-	-
Enforcer Over Nite Pest Control	3	1	0	1	1	3	0	0	0	2	1	0	1	0	2	0	0
	0	1.0%	-	0	1.0%	0	-	-	-	1.0%	0	-	1.0%	-	1.0%	-	-
Harris Home Pest Control	3	1	0	0	2	3	0	0	0	2	1	0	0	0	3	0	0
	0	1.0%	-	-	2.0%	0	-	-	-	1.0%	0	-	-	-	2.0%	-	-
C																	
Safer Flying Insect Killer	3	0	0	2	1	3	0	0	0	1	0	2	1	0	1	1	0
	0	-	-	1.0%	1.0%	0	-	-	-	1.0%	-	1.0%	1.0%	-	1.0%	1.0%	-
J																	
Victor Poison Free Ant & Roach	3	0	1	1	1	3	0	0	0	1	2	0	1	0	2	0	0
	0	-	1.0%	0	1.0%	0	-	-	-	1.0%	1.0%	-	1.0%	-	1.0%	-	-
Harris Spider Killer	2	0	0	0	2	2	0	0	0	1	1	0	0	0	1	0	1
	0	-	-	-	2.0%	0	-	-	-	1.0%	0	-	-	-	1.0%	-	1.0%
C																	
Harris Roach Killer	2	0	0	1	1	2	0	0	0	2	0	0	0	0	1	1	0
	0	-	-	0	1.0%	0	-	-	-	1.0%	-	-	-	-	1.0%	1.0%	-
J																	
(Continued)																	

Table 5D-2: What Brand(s) of Household Insecticides did you Purchase? If Possible, Please Refer to the Container

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Other	11	3	2	6	0	11	0	0	0	2	1	8	3	3	4	0	1
	2.0%	2.0%	1.0%	2.0%	-	2.0%	-	-	-	1.0%	0	5.0%	3.0%	2.0%	2.0%	-	1.0%
	d											ij	o		o		
Don't know	49	7	13	18	11	47	1	1	0	9	25	15	10	10	14	11	4
	7.0%	6.0%	8.0%	6.0%	9.0%	7.0%	3.0%	4.0%	-	5.0%	7.0%	9.0%	9.0%	6.0%	8.0%	9.0%	3.0%
													P		p	P	
Sigma	1403	217	274	633	279	1241	52	55	55	420	665	318	215	294	430	204	260
	195.0%	178.0%	170.0%	201.0%	227.0%	195.0%	168.0%	220.0%	204.0%	235.0%	182.0%	181.0%	189.0%	186.0%	239.0%	162.0%	182.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

PRODUCT FORM

Aerosol sprays account for the majority of household insecticides used in 2016, with 54% of the respondents citing the purchase of this product form. Ready-to-use (RTU) liquids with applicator are the second most purchased product form, accounting for 22% of the responses. Baits ranked third and accounted for 21% of the responses. Regionally, aerosol spray usage ranges from a low in the Northeast of 48% compared to a high of 57% in the Midwest.

Table 5D-3: What Form was the Household Insecticides?

	Region					Dwelling			Population density			Family income					
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
Base: Have Used Household Insecticides in the Past Year	721	122	161	315	123	638	31*	25**	27**	179	366	176	114	158	180	126	143
Aerosol Spray	389	59	92	173	65	341	17	17	14	97	196	96	64	85	100	63	77
	54.0%	48.0%	57.0%	55.0%	53.0%	53.0%	55.0%	68.0%	52.0%	54.0%	54.0%	55.0%	56.0%	54.0%	56.0%	50.0%	54.0%
Ready-to-use (RTU) liquid with applicator	157	16	44	66	31	135	6	5	11	36	76	45	24	32	42	26	33
	22.0%	13.0%	27.0%	21.0%	25.0%	21.0%	19.0%	20.0%	41.0%	20.0%	21.0%	26.0%	21.0%	20.0%	23.0%	21.0%	23.0%
			A	a	A												
Baits	154	24	34	73	23	137	2	7	8	34	79	41	22	33	44	31	24
	21.0%	20.0%	21.0%	23.0%	19.0%	21.0%	6.0%	28.0%	30.0%	19.0%	22.0%	23.0%	19.0%	21.0%	24.0%	25.0%	17.0%
Liquid concentrate						F									P		
	97	21	17	45	14	87	6	3	1	30	48	19	17	21	22	14	23
	13.0%	17.0%	11.0%	14.0%	11.0%	14.0%	19.0%	12.0%	4.0%	17.0%	13.0%	11.0%	15.0%	13.0%	12.0%	11.0%	16.0%
Granules	65	12	12	29	12	59	3	1	2	24	31	10	9	10	17	13	16
	9.0%	10.0%	7.0%	9.0%	10.0%	9.0%	10.0%	4.0%	7.0%	13.0%	8.0%	6.0%	8.0%	6.0%	9.0%	10.0%	11.0%
	jK																
(Continued)																	

Table 5D-3: What Form was the Household Insecticides?

	Region					Dwelling			Population density			Family income					
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Dust	56	10	6	30	10	49	4	1	2	21	23	12	9	10	18	8	11
	8.0%	8.0%	4.0%	10.0%	8.0%	8.0%	13.0%	4.0%	7.0%	12.0%	6.0%	7.0%	8.0%	6.0%	10.0%	6.0%	8.0%
Water soluble powder				B						J							
	34	6	5	13	10	31	3	0	0	13	17	4	4	9	8	3	10
RTU liquid without applicator	5.0%	5.0%	3.0%	4.0%	8.0%	5.0%	10.0%	-	-	7.0%	5.0%	2.0%	4.0%	6.0%	4.0%	2.0%	7.0%
				bc						K							o
Other	33	5	6	13	9	30	3	0	0	14	12	7	3	6	10	6	8
	5.0%	4.0%	4.0%	4.0%	7.0%	5.0%	10.0%	-	-	8.0%	3.0%	4.0%	3.0%	4.0%	6.0%	5.0%	6.0%
Don't know										J							
	8	4	0	4	0	7	0	1	0	2	3	3	0	3	4	1	0
Sigma	1.0%	3.0%	-	1.0%	-	1.0%	-	4.0%	-	1.0%	1.0%	2.0%	-	2.0%	2.0%	1.0%	-
				BD										p	p		
Don't know	15	7	3	3	2	15	0	0	0	2	9	4	1	4	5	3	2
	2.0%	6.0%	2.0%	1.0%	2.0%	2.0%	-	-	-	1.0%	2.0%	2.0%	1.0%	3.0%	3.0%	2.0%	1.0%
Sigma				bCd													
	1008	164	219	449	176	891	44	35	38	273	494	241	153	213	270	168	204
Don't know	140.0%	134.0%	136.0%	143.0%	143.0%	140.0%	142.0%	140.0%	141.0%	153.0%	135.0%	137.0%	134.0%	135.0%	150.0%	133.0%	143.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

RETAIL OUTLET

Household insecticides are most commonly purchased at discount or mass-merchandise stores or home improvement centers. Discount and mass-merchandise stores account for 39% of the responses, and home improvement centers account for 29% of responses. Supermarkets account for 7% of the responses.

Regionally, the Midwest and South have higher purchase incidence of household insecticides in discount or mass-merchandise stores. With regard to income, respondents who purchase household insecticides in discount or mass-merchandise stores tend to have lower incomes.

PRODUCT USAGE

Household insecticides are generally purchased for more than one type of pest, but are most frequently used for the control of ants, with 61%, spiders, with 36%, roaches, with 30%, mosquitoes, with 22%, and flies, with 21% of respondents indicating purchase. Ants were the leading problem in all regions. Regionally, purchases to control roaches are highest in the South, and with regard to population density, highest in urban areas. Fire ants were reported to be a frequent target of purchase in the South where 21% of respondents listed them.

Table 5D-4: What Place are Each of the Following Purchased Most Often? "Household Insecticides"

	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used 'Household insecticides' in Past Year	721	122	161	315	123	638	31*	25**	27**	179	366	176	114	158	180	126	143
Discount/mass merchandise store (e.g. Wal-Mart, Kmart)	283	30	69	134	50	246	8	13	16	59	139	85	57	76	70	38	42
	39.0%	25.0%	43.0%	43.0%	41.0%	39.0%	26.0%	52.0%	59.0%	33.0%	38.0%	48.0%	50.0%	48.0%	39.0%	30.0%	29.0%
Home improvement center (e.g. Home Depot, Lowes)		A	A	A								II	nOP	nOP	p		
	211	39	46	97	29	197	4	6	4	50	119	42	18	37	54	54	48
	29.0%	32.0%	29.0%	31.0%	24.0%	31.0%	13.0%	24.0%	15.0%	28.0%	33.0%	24.0%	16.0%	23.0%	30.0%	43.0%	34.0%
Supermarket/grocery store						F					K				L	LMN	Lm
	51	13	14	17	7	39	6	2	4	10	33	8	11	12	13	3	12
	7.0%	11.0%	9.0%	5.0%	6.0%	6.0%	19.0%	8.0%	15.0%	6.0%	9.0%	5.0%	10.0%	8.0%	7.0%	2.0%	8.0%
Hardware store (e.g. True Value)		c					E				k		O	o	o		O
	41	8	11	13	9	39	1	0	1	13	16	12	9	9	10	5	8
	6.0%	7.0%	7.0%	4.0%	7.0%	6.0%	3.0%	-	4.0%	7.0%	4.0%	7.0%	8.0%	6.0%	6.0%	4.0%	6.0%
Lawn and garden center/nursery	34	12	4	10	8	31	3	0	0	12	16	6	5	4	12	5	8
	5.0%	10.0%	2.0%	3.0%	7.0%	5.0%	10.0%	-	-	7.0%	4.0%	3.0%	4.0%	3.0%	7.0%	4.0%	6.0%
Farm supply store		BC			b										m		
	21	3	4	12	2	18	3	0	0	7	7	7	4	6	2	3	6
	3.0%	2.0%	2.0%	4.0%	2.0%	3.0%	10.0%	-	-	4.0%	2.0%	4.0%	4.0%	4.0%	1.0%	2.0%	4.0%
Warehouse/wholesale club						E											n
	20	5	1	10	4	17	3	0	0	9	8	3	1	4	2	8	5
	3.0%	4.0%	1.0%	3.0%	3.0%	3.0%	10.0%	-	-	5.0%	2.0%	2.0%	1.0%	3.0%	1.0%	6.0%	3.0%
Mail order/catalog		B		b	b		E			jk						LN	
	15	1	3	6	5	15	0	0	0	6	6	3	1	1	4	6	3
	2.0%	1.0%	2.0%	2.0%	4.0%	2.0%	-	-	-	3.0%	2.0%	2.0%	1.0%	1.0%	2.0%	5.0%	2.0%
Other																IM	
	20	6	3	5	6	17	1	1	1	7	8	5	5	3	3	3	6
	3.0%	5.0%	2.0%	2.0%	5.0%	3.0%	3.0%	4.0%	4.0%	4.0%	2.0%	3.0%	4.0%	2.0%	2.0%	2.0%	4.0%
Don't know		C			C												
	25	5	6	11	3	19	2	3	1	6	14	5	3	6	10	1	5
	3.0%	4.0%	4.0%	3.0%	2.0%	3.0%	6.0%	12.0%	4.0%	3.0%	4.0%	3.0%	3.0%	4.0%	6.0%	1.0%	3.0%
Sigma															O		
	721	122	161	315	123	638	31	25	27	179	366	176	114	158	180	126	143
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing																	

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

Table 5D-5: What Pests were you Trying to get Rid of?																	
	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
Base: Have Used Household Insecticides in the Past Year	721	122	161	315	123	638	31*	25**	27**	179	366	176	114	158	180	126	143
Ants	440	73	106	184	77	389	14	17	20	89	236	115	70	86	120	81	83
	61.0%	60.0%	66.0%	58.0%	63.0%	61.0%	45.0%	68.0%	74.0%	50.0%	64.0%	65.0%	61.0%	54.0%	67.0%	64.0%	58.0%
Spiders						f					l	l			M	m	
	259	35	67	106	51	232	11	9	7	66	129	64	42	57	70	38	52
	36.0%	29.0%	42.0%	34.0%	41.0%	36.0%	35.0%	36.0%	26.0%	37.0%	35.0%	36.0%	37.0%	36.0%	39.0%	30.0%	36.0%
			Ac		A												
Roaches	215	18	28	139	30	186	7	12	10	65	105	45	47	48	44	34	42
	30.0%	15.0%	17.0%	44.0%	24.0%	29.0%	23.0%	48.0%	37.0%	36.0%	29.0%	26.0%	41.0%	30.0%	24.0%	27.0%	29.0%
				ABD	a						JK		mNOP				
Mosquitoes	156	28	31	71	26	139	5	8	4	46	71	39	22	29	43	23	39
	22.0%	23.0%	19.0%	23.0%	21.0%	22.0%	16.0%	32.0%	15.0%	26.0%	19.0%	22.0%	19.0%	18.0%	24.0%	18.0%	27.0%
										J							mo
Flies	152	25	27	66	34	132	5	10	5	42	69	41	22	33	34	27	36
	21.0%	20.0%	17.0%	21.0%	28.0%	21.0%	16.0%	40.0%	19.0%	23.0%	19.0%	23.0%	19.0%	21.0%	19.0%	21.0%	25.0%
					B												
Fleas	131	17	32	63	19	114	4	6	7	35	64	32	32	30	24	19	26
	18.0%	14.0%	20.0%	20.0%	15.0%	18.0%	13.0%	24.0%	26.0%	20.0%	17.0%	18.0%	28.0%	19.0%	13.0%	15.0%	18.0%
														mNOP			
Wasps/hornets	126	23	29	51	23	112	3	4	7	24	64	38	20	31	34	15	26
	17.0%	19.0%	18.0%	16.0%	19.0%	18.0%	10.0%	16.0%	26.0%	13.0%	17.0%	22.0%	18.0%	20.0%	19.0%	12.0%	18.0%
												l		o			
Fire ants	111	14	16	66	15	99	3	6	3	36	55	20	15	30	20	13	33
	15.0%	11.0%	10.0%	21.0%	12.0%	16.0%	10.0%	24.0%	11.0%	20.0%	15.0%	11.0%	13.0%	19.0%	11.0%	10.0%	23.0%
				ABD						K				NO			LNO
(Continued)																	



Table 5D-5: What pests were you trying to get rid of?

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Silverfish	96	11	20	48	17	87	3	5	1	30	46	20	13	15	25	18	25
	13.0%	9.0%	12.0%	15.0%	14.0%	14.0%	10.0%	20.0%	4.0%	17.0%	13.0%	11.0%	11.0%	9.0%	14.0%	14.0%	17.0%
	a																
Water bugs	81	10	15	47	9	69	5	5	2	25	38	18	13	16	27	17	8
	11.0%	8.0%	9.0%	15.0%	7.0%	11.0%	16.0%	20.0%	7.0%	14.0%	10.0%	10.0%	11.0%	10.0%	15.0%	13.0%	6.0%
	abD																
Other	18	6	3	3	6	16	0	2	0	5	6	7	3	5	5	3	2
	2.0%	5.0%	2.0%	1.0%	5.0%	3.0%	-	8.0%	-	3.0%	2.0%	4.0%	3.0%	3.0%	3.0%	2.0%	1.0%
	C																
Don't know	14	6	3	3	2	14	0	0	0	3	8	3	2	3	5	3	1
	2.0%	5.0%	2.0%	1.0%	2.0%	2.0%	-	-	-	2.0%	2.0%	2.0%	2.0%	2.0%	3.0%	2.0%	1.0%
	C																
Sigma	1799	266	377	847	309	1589	60	84	66	466	891	442	301	383	451	291	373
	250.0%	218.0%	234.0%	269.0%	251.0%	249.0%	194.0%	336.0%	244.0%	260.0%	243.0%	251.0%	264.0%	242.0%	251.0%	231.0%	261.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

5E. PET INSECTICIDES

DOGS

Overview

Overall, 83% of the respondents that own a dog report purchasing flea or tick products within the past year. Nine percent of the answering respondents report that they do not use pet insecticides.

Table 5E-1: When Did you Last Purchase a Flea or Tick Product for your Dog?

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have a Dog	757	132	187	297	141	677	30*	21**	29**	173	375	209	130	159	181	131	156
Less than 6 months ago	431	71	103	191	66	391	10	11	19	97	201	133	76	92	98	76	89
	57.0%	54.0%	55.0%	64.0%	47.0%	58.0%	33.0%	52.0%	66.0%	56.0%	54.0%	64.0%	58.0%	58.0%	54.0%	58.0%	57.0%
6 months to 1 year ago		ABD				F						J					
	196	46	55	68	27	171	14	4	7	46	104	46	35	38	52	34	37
	26.0%	35.0%	29.0%	23.0%	19.0%	25.0%	47.0%	19.0%	24.0%	27.0%	28.0%	22.0%	27.0%	24.0%	29.0%	26.0%	24.0%
More than 1 year ago		CD	D				E										
	62	5	14	21	22	55	3	2	2	18	34	10	8	10	15	14	15
	8.0%	4.0%	7.0%	7.0%	16.0%	8.0%	10.0%	10.0%	7.0%	10.0%	9.0%	5.0%	6.0%	6.0%	8.0%	11.0%	10.0%
Never use flea/tick products		ABC								K	k						
	68	10	15	17	26	60	3	4	1	12	36	20	11	19	16	7	15
	9.0%	8.0%	8.0%	6.0%	18.0%	9.0%	10.0%	19.0%	3.0%	7.0%	10.0%	10.0%	8.0%	12.0%	9.0%	5.0%	10.0%
Sigma		ABC												o			
	757	132	187	297	141	677	30	21	29	173	375	209	130	159	181	131	156
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

Geographic region

The use of flea or tick product on dogs varies among regions, with 89% of the respondents reporting purchase in the Northeast, 87% of the respondents reporting purchase in the South, followed by Midwest and West, with 84% and 66% of the respondents reporting purchase, respectively.

Population density

Overall, 86% of rural respondents reported purchasing flea or tick products, followed by 83% of urban and 82% of suburban respondents.

Brand recollection

K9 Advantix, Frontline, Advantage, and are the three most frequently mentioned pet insecticide brands, accounting for 21%, 17%, and 10% of the responses, respectively. Suburban respondents recorded the largest purchase of K9 Advantix in 2016, with 24% of the respondents reporting purchase. Frontline purchases are most frequently made by respondents in the Midwest, and Advantage purchases are made most frequently in the Northeast.

Product form

Vet medicine is the most-used form reported in 2016 by 37% of respondents to control fleas. Liquid drops/rub-ins have a reported use by 33% of respondents. Collars rank third with 32%, followed by shampoo with 30%. Vet medicine is used the most in South, with 42%, followed by Midwest, with 37%. Thirty-nine percent of the respondents report purchasing vet medicine for tick prevention on dogs. The rural populations is the largest user of tick products, with a 44% incidence of purchase.

Table 5E-2: What Type of Flea and/or Tick Product(s) are you Currently Using for your Dog? "Fleas"

	Region					Dwelling			Population density					Family income			
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Purchased 'Fleas' Products for Dog	656	114	165	273	104	587	26**	15**	28**	153	322	181	114	135	156	116	135
Vet medicine (drops or pills)	241	35	61	115	30	215	9	5	12	44	114	83	42	44	54	41	60
	37.0%	31.0%	37.0%	42.0%	29.0%	37.0%	35.0%	33.0%	43.0%	29.0%	35.0%	46.0%	37.0%	33.0%	35.0%	35.0%	44.0%
				AD									II				Mn
Liquid Drops/rub-in	219	42	59	88	30	194	9	4	12	56	101	62	42	46	52	34	45
	33.0%	37.0%	36.0%	32.0%	29.0%	33.0%	35.0%	27.0%	43.0%	37.0%	31.0%	34.0%	37.0%	34.0%	33.0%	29.0%	33.0%
Collar	208	41	46	83	38	187	12	6	3	68	98	42	27	47	51	38	45
	32.0%	36.0%	28.0%	30.0%	37.0%	32.0%	46.0%	40.0%	11.0%	44.0%	30.0%	23.0%	24.0%	35.0%	33.0%	33.0%	33.0%
Shampoo										JK	k						I
	194	30	45	82	37	170	8	5	11	65	79	50	42	47	43	23	39
	30.0%	26.0%	27.0%	30.0%	36.0%	29.0%	31.0%	33.0%	39.0%	42.0%	25.0%	28.0%	37.0%	35.0%	28.0%	20.0%	29.0%
On Animal Spray										JK			O	O			o
	58	6	10	35	7	48	8	1	1	25	15	18	11	10	15	9	13
	9.0%	5.0%	6.0%	13.0%	7.0%	8.0%	31.0%	7.0%	4.0%	16.0%	5.0%	10.0%	10.0%	7.0%	10.0%	8.0%	10.0%
Comb				ABd						Jk		J					
	49	9	8	24	8	40	7	1	1	20	20	9	8	5	18	8	10
	7.0%	8.0%	5.0%	9.0%	8.0%	7.0%	27.0%	7.0%	4.0%	13.0%	6.0%	5.0%	7.0%	4.0%	12.0%	7.0%	7.0%
Dip										JK					M		
	44	9	9	20	6	33	7	2	2	18	17	9	7	6	13	10	8
	7.0%	8.0%	5.0%	7.0%	6.0%	6.0%	27.0%	13.0%	7.0%	12.0%	5.0%	5.0%	6.0%	4.0%	8.0%	9.0%	6.0%
Powder										JK							
	38	4	8	19	7	30	4	2	2	14	12	12	9	7	11	2	9
	6.0%	4.0%	5.0%	7.0%	7.0%	5.0%	15.0%	13.0%	7.0%	9.0%	4.0%	7.0%	8.0%	5.0%	7.0%	2.0%	7.0%
Trap										J			O		O		o
	14	4	2	5	3	9	4	0	1	9	3	2	2	3	3	2	4
	2.0%	4.0%	1.0%	2.0%	3.0%	2.0%	15.0%	-	4.0%	6.0%	1.0%	1.0%	2.0%	2.0%	2.0%	2.0%	3.0%
Other										JK							
	14	2	2	8	2	13	0	0	1	1	6	7	3	3	2	3	3
	2.0%	2.0%	1.0%	3.0%	2.0%	2.0%	-	-	4.0%	1.0%	2.0%	4.0%	3.0%	2.0%	1.0%	3.0%	2.0%
Sigma	1079	182	250	479	168	939	68	26	46	320	465	294	193	218	262	170	236
	164.0%	160.0%	152.0%	175.0%	162.0%	160.0%	262.0%	173.0%	164.0%	209.0%	144.0%	162.0%	169.0%	161.0%	168.0%	147.0%	175.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. ** very small base (under 30) ineligible for sig testing

Table SE-3. What Type of Flea and/or Tick Product(s) are you Currently Using for your Dog? "Ticks"

	Total	Region					Dwelling				Population density			Family income			
		Northeast	Midwest	South	West	One-family house	Two-family house	Three-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Purchased 'Ticks' Products for Dog	452	95*	113	187	57*	408	15**	13**	16**	92*	224	136	75*	89*	117	78*	93*
Vet medicine (drops or pills)	176 39.0%	33 35.0%	45 40.0%	81 43.0%	17 30.0%	155 38.0%	9 60.0%	5 38.0%	7 44.0%	31 34.0%	85 38.0%	60 44.0%	29 39.0%	31 35.0%	38 32.0%	32 41.0%	46 49.0%
				d													MN
Liquid Drops/rub-in	151 33.0%	33 35.0%	42 37.0%	57 30.0%	19 33.0%	137 34.0%	4 27.0%	3 23.0%	7 44.0%	32 35.0%	70 31.0%	49 36.0%	30 40.0%	38 43.0%	34 29.0%	19 24.0%	30 32.0%
													O	NO			
Collar	109 24.0%	24 25.0%	27 24.0%	42 22.0%	16 28.0%	100 25.0%	4 27.0%	3 23.0%	2 13.0%	24 26.0%	58 26.0%	27 20.0%	13 17.0%	23 26.0%	35 30.0%	19 24.0%	19 20.0%
															I		
Shampoo	95 21.0%	15 16.0%	17 15.0%	48 26.0%	15 26.0%	81 20.0%	5 33.0%	3 23.0%	6 38.0%	36 39.0%	36 16.0%	23 17.0%	21 28.0%	23 26.0%	22 19.0%	13 17.0%	16 17.0%
				aB	b					JK			op				
On Animal Spray	41 9.0%	4 4.0%	7 6.0%	26 14.0%	4 7.0%	38 9.0%	2 13.0%	0 -	1 6.0%	13 14.0%	16 7.0%	12 9.0%	9 12.0%	7 8.0%	16 14.0%	2 3.0%	7 8.0%
				AB						J			O		O		
Dip	38 8.0%	5 5.0%	7 6.0%	22 12.0%	4 7.0%	32 8.0%	4 27.0%	0 -	2 13.0%	12 13.0%	17 8.0%	9 7.0%	7 9.0%	4 4.0%	10 9.0%	10 13.0%	7 8.0%
				a												m	
Powder	27 6.0%	1 1.0%	3 3.0%	20 11.0%	3 5.0%	23 6.0%	2 13.0%	1 8.0%	1 6.0%	12 13.0%	9 4.0%	6 4.0%	7 9.0%	3 3.0%	6 5.0%	4 5.0%	7 8.0%
				AB						JK							
Comb	23 5.0%	3 3.0%	3 3.0%	15 8.0%	2 4.0%	19 5.0%	3 20.0%	1 8.0%	0 -	9 10.0%	9 4.0%	5 4.0%	4 5.0%	2 2.0%	8 7.0%	4 5.0%	5 5.0%
				b						jk							
Trap	13 3.0%	1 1.0%	1 1.0%	9 5.0%	2 4.0%	10 2.0%	3 20.0%	0 -	0 -	6 7.0%	6 3.0%	1 1.0%	0 -	4 4.0%	3 3.0%	4 5.0%	2 2.0%
				b						K				I		L	
Other	8 2.0%	1 1.0%	3 3.0%	4 2.0%	0 -	7 2.0%	1 7.0%	0 -	0 -	1 1.0%	4 2.0%	3 2.0%	0 -	2 2.0%	1 1.0%	3 4.0%	2 2.0%
																I	
Sigma	681 151.0%	120 126.0%	155 137.0%	324 173.0%	82 144.0%	602 148.0%	37 247.0%	16 123.0%	26 163.0%	176 191.0%	310 138.0%	195 143.0%	120 160.0%	137 154.0%	173 148.0%	110 141.0%	141 152.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

Retail outlet

Veterinarians and discount or mass-merchandise stores are the leading retail outlets reported for the purchase of flea control products, with 41% and 21% of respondents, respectively. Purchase from a veterinarian is fairly consistent across all regions. With regard to income levels, there is a general trend toward increased veterinary purchases at higher income levels. Purchase from discount or mass-merchandise stores is higher at the lowest income level and decreases as income level increases. Pet stores and supply stores are frequented overall by 15% of respondents. The highest incidence of purchase in pet stores and supply stores is in the Northeast and West, where 22% and 21% of the respondents, respectively, indicate them as the location where flea products are purchased. Forty-two percent of the respondents indicate purchasing tick products from their veterinarian, followed by discount/mass merchandise stores that account for 19% of tick responses.

Table 5E-4: Where do you Most Often Purchase Flea or Tick Products for your Dog? "Flea"

	Total	Region				Dwelling				Population density			Family income				
		Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Purchased 'Flea' Products for Dog	656	114	165	273	104	587	26**	15**	28**	153	322	181	114	135	156	116	135
Veterinarian	270	40	73	119	38	247	10	5	8	51	135	84	43	40	75	54	58
	41.0%	35.0%	44.0%	44.0%	37.0%	42.0%	38.0%	33.0%	29.0%	33.0%	42.0%	46.0%	38.0%	30.0%	48.0%	47.0%	43.0%
Discount/mass merchandise store (e.g. Wal-Mart, K-Mart)	139	21	41	59	18	121	4	4	10	29	65	45	34	39	26	24	16
	21.0%	18.0%	25.0%	22.0%	17.0%	21.0%	15.0%	27.0%	36.0%	19.0%	20.0%	25.0%	30.0%	29.0%	17.0%	21.0%	12.0%
													NP	NP		p	
Pet store	56	14	7	23	12	51	3	2	0	20	31	5	6	10	12	11	17
	9.0%	12.0%	4.0%	8.0%	12.0%	9.0%	12.0%	13.0%	-	13.0%	10.0%	3.0%	5.0%	7.0%	8.0%	9.0%	13.0%
Pet supply store		B		b	B					K	K						L
	42	11	9	13	9	40	1	0	1	14	23	5	4	7	12	11	8
	6.0%	10.0%	5.0%	5.0%	9.0%	7.0%	4.0%	-	4.0%	9.0%	7.0%	3.0%	4.0%	5.0%	8.0%	9.0%	6.0%
On-line pet products supplier		c								K	K					I	
	37	8	8	12	9	33	1	0	3	6	18	13	4	9	10	3	11
	6.0%	7.0%	5.0%	4.0%	9.0%	6.0%	4.0%	-	11.0%	4.0%	6.0%	7.0%	4.0%	7.0%	6.0%	3.0%	8.0%
Supermarket/grocery store																	o
	23	4	6	9	4	21	1	0	1	11	9	3	5	6	3	3	6
	4.0%	4.0%	4.0%	3.0%	4.0%	4.0%	4.0%	-	4.0%	7.0%	3.0%	2.0%	4.0%	4.0%	2.0%	3.0%	4.0%
Internet/World Wide Web										JK							
	16	3	4	8	1	16	0	0	0	3	7	6	3	4	4	0	5
	2.0%	3.0%	2.0%	3.0%	1.0%	3.0%	-	-	-	2.0%	2.0%	3.0%	3.0%	3.0%	3.0%	-	4.0%
Farm supply store													o	o	o		O
	14	2	5	6	1	12	0	1	1	0	6	8	3	6	3	1	1
	2.0%	2.0%	3.0%	2.0%	1.0%	2.0%	-	7.0%	4.0%	-	2.0%	4.0%	3.0%	4.0%	2.0%	1.0%	1.0%
											i	Ij		op			

(Continued)

Table 5E-4: Where do you Most Often Purchase Flea or Tick Products for your Dog? "Flea"

	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Home improvement center (e.g. Home Depot, Lowes)	13	1	2	8	2	10	2	1	0	3	7	3	2	2	6	2	1
	2.0%	1.0%	1.0%	3.0%	2.0%	2.0%	8.0%	7.0%	-	2.0%	2.0%	2.0%	2.0%	1.0%	4.0%	2.0%	1.0%
Warehouse/wholesale club	11	2	2	4	3	9	1	0	1	2	9	0	2	5	1	1	2
	2.0%	2.0%	1.0%	1.0%	3.0%	2.0%	4.0%	-	4.0%	1.0%	3.0%	-	2.0%	4.0%	1.0%	1.0%	1.0%
Lawn/garden center	9	1	2	3	3	8	1	0	0	5	4	0	0	2	2	1	4
	1.0%	1.0%	1.0%	1.0%	3.0%	1.0%	4.0%	-	-	3.0%	1.0%	-	-	1.0%	1.0%	1.0%	3.0%
Hardware store (e.g. True Value)	8	4	1	1	2	5	2	1	0	5	2	1	1	1	2	3	1
	1.0%	4.0%	1.0%	0	2.0%	1.0%	8.0%	7.0%	-	3.0%	1.0%	1.0%	1.0%	1.0%	1.0%	3.0%	1.0%
Mail order/catalog	5	0	3	2	0	5	0	0	0	2	2	1	2	1	0	1	1
	1.0%	-	2.0%	1.0%	-	1.0%	-	-	-	1.0%	1.0%	1.0%	2.0%	1.0%	-	1.0%	1.0%
Pharmacy	3	1	1	0	1	3	0	0	0	1	1	1	0	1	0	0	2
	0	1.0%	1.0%	-	1.0%	1.0%	-	-	-	1.0%	0	1.0%	-	1.0%	-	-	1.0%
Other	3	0	0	2	1	2	0	0	1	0	1	2	1	1	0	1	0
	0	-	-	1.0%	1.0%	0	-	-	4.0%	-	0	1.0%	1.0%	1.0%	-	1.0%	-
Don't know	7	2	1	4	0	4	0	1	2	1	2	4	4	1	0	0	2
	1.0%	2.0%	1.0%	1.0%	-	1.0%	-	7.0%	7.0%	1.0%	1.0%	2.0%	4.0%	1.0%	-	-	1.0%
Sigma	656	114	165	273	104	587	26	15	28	153	322	181	114	135	156	116	135
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. ** very small base (under 30) ineligible for sig testing

Table 5E-5: Where do you Most Often Purchase Flea or Tick Products for your Dog? "Tick"

	Region					Dwelling			Population density			Family income					
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Purchased 'Tick' Products for Dog	452	95*	113	187	57*	408	15**	13**	16**	92*	224	136	75*	89*	117	78*	93*
Veterinarian	190	36	53	83	18	174	6	4	6	28	99	63	30	30	53	36	41
	42.0%	38.0%	47.0%	44.0%	32.0%	43.0%	40.0%	31.0%	38.0%	30.0%	44.0%	46.0%	40.0%	34.0%	45.0%	46.0%	44.0%
Discount/mass merchandise store (e.g. Wal-Mart, K-Mart)			d	d							I	I			m		
	87	17	22	33	15	77	1	5	4	18	42	27	22	20	18	14	13
	19.0%	18.0%	19.0%	18.0%	26.0%	19.0%	7.0%	38.0%	25.0%	20.0%	19.0%	20.0%	29.0%	22.0%	15.0%	18.0%	14.0%
Pet store													NP				
	40	10	5	19	6	37	1	2	0	14	22	4	5	4	9	11	11
	9.0%	11.0%	4.0%	10.0%	11.0%	9.0%	7.0%	15.0%	-	15.0%	10.0%	3.0%	7.0%	4.0%	8.0%	14.0%	12.0%
On-line pet products supplier		b		b						K	K					M	m
	30	9	5	10	6	27	2	0	1	5	15	10	3	6	8	3	10
	7.0%	9.0%	4.0%	5.0%	11.0%	7.0%	13.0%	-	6.0%	5.0%	7.0%	7.0%	4.0%	7.0%	7.0%	4.0%	11.0%
Pet supply store																	o
	25	12	6	4	3	24	0	0	1	7	14	4	2	5	9	4	5
	6.0%	13.0%	5.0%	2.0%	5.0%	6.0%	-	-	6.0%	8.0%	6.0%	3.0%	3.0%	6.0%	8.0%	5.0%	5.0%
Internet/World Wide Web		bc															
	15	3	3	7	2	15	0	0	0	3	5	7	3	4	3	0	5
	3.0%	3.0%	3.0%	4.0%	4.0%	4.0%	-	-	-	3.0%	2.0%	5.0%	4.0%	4.0%	3.0%	-	5.0%
Supermarket/grocery store													o	o			O
	10	1	3	5	1	9	1	0	0	3	6	1	1	3	2	2	2
	2.0%	1.0%	3.0%	3.0%	2.0%	2.0%	7.0%	-	-	3.0%	3.0%	1.0%	1.0%	3.0%	2.0%	3.0%	2.0%
Home improvement center (e.g. Home Depot, Lowes)																	
	10	2	2	5	1	8	1	1	0	4	3	3	1	1	6	1	1
	2.0%	2.0%	2.0%	3.0%	2.0%	2.0%	7.0%	8.0%	-	4.0%	1.0%	2.0%	1.0%	1.0%	5.0%	1.0%	1.0%
(Continued)																	

Table 5E-5: Where do you Most Often Purchase Flea or Tick Products for your Dog? *Tick*

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Warehouse/wholesale club	10	1	4	5	0	7	1	0	2	2	6	2	1	7	1	0	1
	2.0%	1.0%	4.0%	3.0%	-	2.0%	7.0%	-	13.0%	2.0%	3.0%	1.0%	1.0%	8.0%	1.0%	-	1.0%
Farm supply store	9	0	3	6	0	7	0	1	1	0	3	6	2	3	2	2	0
	2.0%	-	3.0%	3.0%	-	2.0%	-	8.0%	6.0%	-	1.0%	4.0%	3.0%	3.0%	2.0%	3.0%	-
Lawn/garden center	9	1	1	5	2	9	0	0	0	5	3	1	1	2	4	1	1
	2.0%	1.0%	1.0%	3.0%	4.0%	2.0%	-	-	-	5.0%	1.0%	1.0%	1.0%	2.0%	3.0%	1.0%	1.0%
Mail order/catalog	5	0	3	2	0	4	1	0	0	1	3	1	1	2	1	1	0
	1.0%	-	3.0%	1.0%	-	1.0%	7.0%	-	-	1.0%	1.0%	1.0%	1.0%	2.0%	1.0%	1.0%	-
Hardware store (e.g. True Value)	3	0	1	0	2	2	1	0	0	0	1	2	0	0	1	2	0
	1.0%	-	1.0%	-	4.0%	0	7.0%	-	-	-	0	1.0%	-	-	1.0%	3.0%	-
Pharmacy	3	1	1	0	1	3	0	0	0	1	1	1	0	1	0	0	2
	1.0%	1.0%	1.0%	-	2.0%	1.0%	-	-	-	1.0%	0	1.0%	-	1.0%	-	-	2.0%
Other	1	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	0
	0	-	-	1.0%	-	0	-	-	-	-	-	1.0%	-	-	-	1.0%	-
Don't know	5	2	1	2	0	4	0	0	1	1	1	3	3	1	0	0	1
	1.0%	2.0%	1.0%	1.0%	-	1.0%	-	-	6.0%	1.0%	0	2.0%	4.0%	1.0%	-	-	1.0%
Sigma	452	95	113	187	57	408	15	13	16	92	224	136	75	89	117	78	93
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Proportions/Means: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

CATS

Overview

Overall, 58% of the respondents that own a cat report purchasing flea or tick products within twelve months. Twenty-eight percent of the answering respondents report that they do not use pet insecticides.

Table 5E-6: When did you Last Purchase a Flea or Tick Product for your Cat?

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have A Cat	534	91*	142	212	89*	467	19**	18**	30*	103	257	174	118	118	128	88*	82*
Less than 6 months ago	208	39	48	95	26	181	7	6	14	33	105	70	39	51	56	28	34
	39.0%	43.0%	34.0%	45.0%	29.0%	39.0%	37.0%	33.0%	47.0%	32.0%	41.0%	40.0%	33.0%	43.0%	44.0%	32.0%	41.0%
6 months to 1 year ago		d		BD										o	lo		
	99	19	20	45	15	85	5	2	7	21	49	29	22	20	23	16	18
More than 1 year ago	19.0%	21.0%	14.0%	21.0%	17.0%	18.0%	26.0%	11.0%	23.0%	20.0%	19.0%	17.0%	19.0%	17.0%	18.0%	18.0%	22.0%
				b													
Never use flea/tick products	77	11	22	33	11	70	2	3	2	23	27	27	20	8	23	20	6
	14.0%	12.0%	15.0%	16.0%	12.0%	15.0%	11.0%	17.0%	7.0%	22.0%	11.0%	16.0%	17.0%	7.0%	18.0%	23.0%	7.0%
Sigma										J			MP		MP	MP	
	150	22	52	39	37	131	5	7	7	26	76	48	37	39	26	24	24
Sigma	28.0%	24.0%	37.0%	18.0%	42.0%	28.0%	26.0%	39.0%	23.0%	25.0%	30.0%	28.0%	31.0%	33.0%	20.0%	27.0%	29.0%
			AC		AC								N	N			
Sigma	534	91	142	212	89	467	19	18	30	103	257	174	118	118	128	88	82
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

Geographic region

The purchase of flea or tick products for cats varies among regions, with 66% of the respondents reporting purchase in the South, followed by Northeast, Midwest and West, with 64%, 48%, and 46% of the respondents, respectively.

Population density

Overall, 60% of suburban respondents reported using flea or tick products on their cats, while 57% of rural and 52% of urban respondents report using them.

Brand recollection

Advantage, Advantage II, and Frontline Plus are the three most frequently mentioned pet insecticide brands, accounting for 21%, 20%, and 16% of the responses, respectively. Suburban respondents recorded the largest purchase of Advantage in 2016, with 24%, with rural respondents purchasing it the least, with 16%. Frontline purchases occur most frequently in the South.

Product form

Purchases of liquid drops/rub-ins are reported most (42%) of respondents to treat fleas in 2016. Collars ranked second with 32%, followed by vet medicines with 20%. Liquid drops/rub-in form is used the most in West, and least in the Midwest, with 49% and 40% of the respondents reporting purchase, respectively. Thirty-eight percent of the respondents report purchasing liquid drops for tick prevention on cats.

Table SE-7: What Type of Flea and/or Tick Product(s) are you Currently Using for your Cat? *Flea*

	Total	Region				Dwelling				Population density				Family income			
		Northeast	Midwest	South	West	One-family-house	Two-family-house	Three-family-house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Purchased 'Flea' Products for Cat	373	68*	88*	168	49*	327	12**	11**	23**	73*	176	124	78*	77*	100	63*	55*
	158	30	35	69	24	134	5	6	13	23	81	54	31	37	47	26	17
Liquid Drops/rub-in	42.0%	44.0%	40.0%	41.0%	49.0%	41.0%	42.0%	55.0%	57.0%	32.0%	46.0%	44.0%	40.0%	48.0%	47.0%	41.0%	31.0%
											I	I		P	P		
Collar	121	29	23	59	10	110	4	1	6	28	44	49	27	27	35	17	15
	32.0%	43.0%	26.0%	35.0%	20.0%	34.0%	33.0%	9.0%	26.0%	38.0%	25.0%	40.0%	35.0%	35.0%	35.0%	27.0%	27.0%
		BD		d						J		J					
Vet medicine (drops or pills)	73	12	21	30	10	64	2	1	6	13	42	18	11	11	20	15	16
	20.0%	18.0%	24.0%	18.0%	20.0%	20.0%	17.0%	9.0%	26.0%	18.0%	24.0%	15.0%	14.0%	14.0%	20.0%	24.0%	29.0%
											K						LM
Shampoo	44	6	13	17	8	36	3	1	4	14	18	12	12	6	11	8	7
	12.0%	9.0%	15.0%	10.0%	16.0%	11.0%	25.0%	9.0%	17.0%	19.0%	10.0%	10.0%	15.0%	8.0%	11.0%	13.0%	13.0%
											JK						
On Animal Spray	28	6	5	12	5	24	3	0	1	6	11	11	9	6	6	2	5
	8.0%	9.0%	6.0%	7.0%	10.0%	7.0%	25.0%	-	4.0%	8.0%	6.0%	9.0%	12.0%	8.0%	6.0%	3.0%	9.0%
													O				
Powder	25	2	7	12	4	21	1	0	3	5	13	7	8	9	5	2	1
	7.0%	3.0%	8.0%	7.0%	8.0%	6.0%	8.0%	-	13.0%	7.0%	7.0%	6.0%	10.0%	12.0%	5.0%	3.0%	2.0%
													P	oP			
Comb	24	4	5	11	4	19	3	1	1	11	11	2	4	4	8	5	3
	6.0%	6.0%	6.0%	7.0%	8.0%	6.0%	25.0%	9.0%	4.0%	15.0%	6.0%	2.0%	5.0%	5.0%	8.0%	8.0%	5.0%
										JK	k						
Dip	23	6	4	9	4	19	2	0	2	12	7	4	7	3	7	4	2
	6.0%	9.0%	5.0%	5.0%	8.0%	6.0%	17.0%	-	9.0%	16.0%	4.0%	3.0%	9.0%	4.0%	7.0%	6.0%	4.0%
										JK							
Trap	5	1	0	2	2	4	1	0	0	2	3	0	0	1	4	0	0
	1.0%	1.0%	-	1.0%	4.0%	1.0%	8.0%	-	-	3.0%	2.0%	-	-	1.0%	4.0%	-	-
				b						k					I		
Other	21	2	7	11	1	16	1	2	2	4	8	9	9	3	4	3	2
	6.0%	3.0%	8.0%	7.0%	2.0%	5.0%	8.0%	18.0%	9.0%	5.0%	5.0%	7.0%	12.0%	4.0%	4.0%	5.0%	4.0%
													mn				
Sigma	522	98	120	232	72	447	25	12	38	118	238	166	118	107	147	82	68
	140.0%	144.0%	136.0%	138.0%	147.0%	137.0%	208.0%	109.0%	165.0%	162.0%	135.0%	134.0%	151.0%	139.0%	147.0%	130.0%	124.0%
Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) Ineligible for sig testing																	

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

Table 5E-B: What Type of Flea and/or Tick Product(s) are you Currently Using for your Cat? "Tick"

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Purchased 'Tick' Products for Cat	167	36*	34*	79*	18**	146	5**	4**	12**	31*	73*	63*	34*	35*	52*	18**	28**
Liquid Drops/rub-in	63	15	13	28	7	52	2	2	7	6	29	28	12	13	21	10	7
	38.0%	42.0%	38.0%	35.0%	39.0%	36.0%	40.0%	50.0%	58.0%	19.0%	40.0%	44.0%	35.0%	37.0%	40.0%	56.0%	25.0%
Collar	54	16	8	27	3	49	1	0	4	10	18	26	12	12	15	5	10
	32.0%	44.0%	24.0%	34.0%	17.0%	34.0%	20.0%	-	33.0%	32.0%	25.0%	41.0%	35.0%	34.0%	29.0%	28.0%	36.0%
Vet medicine (drops or pills)	41	7	12	19	3	37	1	1	2	11	23	7	5	9	14	5	8
	25.0%	19.0%	35.0%	24.0%	17.0%	25.0%	20.0%	25.0%	17.0%	35.0%	32.0%	11.0%	15.0%	26.0%	27.0%	28.0%	29.0%
On Animal Spray	16	3	1	8	4	15	0	0	1	5	5	6	6	2	5	1	2
	10.0%	8.0%	3.0%	10.0%	22.0%	10.0%	-	-	8.0%	16.0%	7.0%	10.0%	18.0%	6.0%	10.0%	6.0%	7.0%
Shampoo	12	2	3	5	2	9	2	0	1	5	5	2	5	1	3	2	1
	7.0%	6.0%	9.0%	6.0%	11.0%	6.0%	40.0%	-	8.0%	16.0%	7.0%	3.0%	15.0%	3.0%	6.0%	11.0%	4.0%
Dip	10	2	2	4	2	5	3	0	2	4	3	3	4	0	6	0	0
	6.0%	6.0%	6.0%	5.0%	11.0%	3.0%	60.0%	-	17.0%	13.0%	4.0%	5.0%	12.0%	-	12.0%	-	-
Powder	9	1	2	3	3	8	1	0	0	3	2	4	3	1	4	0	1
	5.0%	3.0%	6.0%	4.0%	17.0%	5.0%	20.0%	-	-	10.0%	3.0%	6.0%	9.0%	3.0%	8.0%	-	4.0%
Comb	8	2	1	3	2	7	1	0	0	4	3	1	2	0	4	1	1
	5.0%	6.0%	3.0%	4.0%	11.0%	5.0%	20.0%	-	-	13.0%	4.0%	2.0%	6.0%	-	8.0%	6.0%	4.0%
Trap	2	0	0	1	1	1	1	0	0	1	1	0	1	0	1	0	0
	1.0%	-	-	1.0%	6.0%	1.0%	20.0%	-	-	3.0%	1.0%	-	3.0%	-	2.0%	-	-
Other	6	0	2	2	2	4	0	1	1	0	3	3	2	1	2	1	0
	4.0%	-	6.0%	3.0%	11.0%	3.0%	-	25.0%	8.0%	-	4.0%	5.0%	6.0%	3.0%	4.0%	6.0%	-
Sigma	221	48	44	100	29	187	12	4	18	49	92	80	52	39	75	25	30
	132.0%	133.0%	129.0%	127.0%	161.0%	128.0%	240.0%	100.0%	150.0%	158.0%	126.0%	127.0%	153.0%	111.0%	144.0%	139.0%	107.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

Retail outlet

Discount or mass-merchandise stores and veterinarians are listed by respondents as the location where they purchase their flea products for cats, with 31% and 30% reporting purchase at these outlets, respectively. Purchase from discount or mass-merchandise stores is highest in the South, with 34%, and lowest in the Northeast, with 24%. With regard to income levels, there is a general trend toward increased veterinary purchases at higher income levels. Online pet products suppliers and pet stores are frequented overall by 14% of respondents. The highest incidence of purchase in pet stores is in the Northeast, with 24%, versus the South, which is the lowest with 9%. Thirty-two percent of the respondents indicate purchasing tick products from their veterinarian, followed by discount/mass merchandise stores, which account for 28% for tick control products.

Table 5E-9: Where do you Most Often Purchase Flea or Tick Products for your Cat? "Flea"

	Total	Region				Dwelling			Population density			Family income					
		Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Purchased 'Flea' Products for Cat	373	68*	88*	168	49*	327	12**	11**	23**	73*	176	124	78*	77*	100	63*	55*
Discount/mass merchandise store (e.g. Wal-Mart, K-Mart)	115	16	29	57	13	99	1	4	11	20	43	52	34	31	27	14	9
	31.0%	24.0%	33.0%	34.0%	27.0%	30.0%	8.0%	36.0%	48.0%	27.0%	24.0%	42.0%	44.0%	40.0%	27.0%	22.0%	16.0%
Veterinarian	112	16	29	51	16	101	3	2	6	17	60	35	18	18	34	24	18
	30.0%	24.0%	33.0%	30.0%	33.0%	31.0%	25.0%	18.0%	26.0%	23.0%	34.0%	28.0%	23.0%	23.0%	34.0%	38.0%	33.0%
On-line pet products supplier	27	6	6	13	2	22	1	2	2	5	12	10	2	7	9	6	3
	7.0%	9.0%	7.0%	8.0%	4.0%	7.0%	8.0%	18.0%	9.0%	7.0%	7.0%	8.0%	3.0%	9.0%	9.0%	10.0%	5.0%
Pet store	27	8	7	8	4	22	4	1	0	11	11	5	2	5	7	6	7
	7.0%	12.0%	8.0%	5.0%	8.0%	7.0%	33.0%	9.0%	-	15.0%	6.0%	4.0%	3.0%	6.0%	7.0%	10.0%	13.0%
Pet supply store	23	8	5	6	4	23	0	0	0	5	16	2	1	2	11	5	4
	6.0%	12.0%	6.0%	4.0%	8.0%	7.0%	-	-	-	7.0%	9.0%	2.0%	1.0%	3.0%	11.0%	8.0%	7.0%
Internet/World Wide Web	18	5	2	8	3	17	0	1	0	1	12	5	6	1	3	2	6
	5.0%	7.0%	2.0%	5.0%	6.0%	5.0%	-	9.0%	-	1.0%	7.0%	4.0%	8.0%	1.0%	3.0%	3.0%	11.0%
Supermarket/grocery store	12	2	2	5	3	11	1	0	0	4	7	1	5	2	2	0	3
	3.0%	3.0%	2.0%	3.0%	6.0%	3.0%	8.0%	-	-	5.0%	4.0%	1.0%	6.0%	3.0%	2.0%	-	5.0%
Farm supply store	11	2	4	4	1	10	1	0	0	1	1	9	5	4	1	1	0
	3.0%	3.0%	5.0%	2.0%	2.0%	3.0%	8.0%	-	-	1.0%	1.0%	7.0%	6.0%	5.0%	1.0%	2.0%	-

(Continued)

Table 5E-9: Where do you Most Often Purchase Flea or Tick Products for your Cat? "Flea"

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Warehouse/wholesale club	8	1	3	3	1	5	0	1	2	2	4	2	0	5	2	1	0
	2.0%	1.0%	3.0%	2.0%	2.0%	2.0%	-	9.0%	9.0%	3.0%	2.0%	2.0%	-	6.0%	2.0%	2.0%	-
Lawn/garden center	7	2	0	4	1	7	0	0	0	4	3	0	1	0	2	2	2
	2.0%	3.0%	-	2.0%	2.0%	2.0%	-	-	-	5.0%	2.0%	-	1.0%	-	2.0%	3.0%	4.0%
Home improvement center (e.g. Home Depot, Lowes)	6	1	0	5	0	5	1	0	0	1	4	1	1	1	1	2	1
	2.0%	1.0%	-	3.0%	-	2.0%	8.0%	-	-	1.0%	2.0%	1.0%	1.0%	1.0%	1.0%	3.0%	2.0%
Mail order/catalog	1	0	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0
	0	-	1.0%	-	-	0	-	-	-	-	-	1.0%	-	1.0%	-	-	-
Hardware store (e.g. True Value)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pharmacy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	4	1	0	3	0	3	0	0	1	2	2	0	1	0	1	0	2
	1.0%	1.0%	-	2.0%	-	1.0%	-	-	4.0%	3.0%	1.0%	-	1.0%	-	1.0%	-	4.0%
Don't know	2	0	0	1	1	1	0	0	1	0	1	1	2	0	0	0	0
	1.0%	-	-	1.0%	2.0%	0	-	-	4.0%	-	1.0%	1.0%	3.0%	-	-	-	-
Sigma	373	68	88	168	49	327	12	11	23	73	176	124	78	77	100	63	55
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

Table 5E-10: Where do you Most Often Purchase Flea or Tick Products for your Cat? "Tick"

	Total	Region				Dwelling			Population density			Family income					
		Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Purchased 'Tick' Products for Cat	167	36*	34*	79*	18**	146	5**	4**	12**	31*	73*	63*	34*	35*	52*	18**	28**
Veterinarian	54	7	9	32	6	49	1	1	3	9	28	17	10	9	19	7	9
	32.0%	19.0%	26.0%	41.0%	33.0%	34.0%	20.0%	25.0%	25.0%	29.0%	38.0%	27.0%	29.0%	26.0%	37.0%	39.0%	32.0%
Discount/mass merchandise store (e.g. Wal-Mart, K-Mart)	A																
	47	7	7	27	6	41	1	1	4	7	15	25	13	11	13	5	5
	28.0%	19.0%	21.0%	34.0%	33.0%	28.0%	20.0%	25.0%	33.0%	23.0%	21.0%	40.0%	38.0%	31.0%	25.0%	28.0%	18.0%
	J																
On-line pet products supplier	17	6	5	6	0	13	1	2	1	3	8	6	2	4	6	2	3
	10.0%	17.0%	15.0%	8.0%	-	9.0%	20.0%	50.0%	8.0%	10.0%	11.0%	10.0%	6.0%	11.0%	12.0%	11.0%	11.0%
Pet supply store	9	5	0	2	2	9	0	0	0	3	5	1	0	1	6	0	2
	5.0%	14.0%	-	3.0%	11.0%	6.0%	-	-	-	10.0%	7.0%	2.0%	-	3.0%	12.0%	-	7.0%
Pet store	BC									k			L				
	8	2	3	2	1	8	0	0	0	5	2	1	0	1	1	2	4
	5.0%	6.0%	9.0%	3.0%	6.0%	5.0%	-	-	-	16.0%	3.0%	2.0%	-	3.0%	2.0%	11.0%	14.0%
	JK																
Internet/World Wide Web	8	3	1	4	0	8	0	0	0	0	4	4	3	1	0	1	3
	5.0%	8.0%	3.0%	5.0%	-	5.0%	-	-	-	-	5.0%	6.0%	9.0%	3.0%	-	6.0%	11.0%
Farm supply store	N																
	5	2	2	1	0	5	0	0	0	0	0	5	2	1	0	1	1
	3.0%	6.0%	6.0%	1.0%	-	3.0%	-	-	-	-	-	8.0%	6.0%	3.0%	-	6.0%	4.0%
	J n																
Warehouse/wholesale club	5	0	3	1	1	3	0	0	2	1	3	1	0	4	1	0	0
	3.0%	-	9.0%	1.0%	6.0%	2.0%	-	-	17.0%	3.0%	4.0%	2.0%	-	11.0%	2.0%	-	-
aC Ln																	

(Continued)

Table 5E-10: Where do you Most Often Purchase Flea or Tick Products for your Cat? "Tick"

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Lawn/garden center	4	0	0	2	2	3	1	0	0	1	3	0	2	0	2	0	0
	2.0%	-	-	3.0%	11.0%	2.0%	20.0%	-	-	3.0%	4.0%	-	6.0%	-	4.0%	-	-
Supermarket/grocery store	4	1	2	1	0	3	1	0	0	0	3	1	1	1	1	0	1
	2.0%	3.0%	6.0%	1.0%	-	2.0%	20.0%	-	-	-	4.0%	2.0%	3.0%	3.0%	2.0%	-	4.0%
Home improvement center (e.g. Home Depot, Lowes)	3	2	1	0	0	3	0	0	0	2	1	0	0	1	2	0	0
	2.0%	6.0%	3.0%	-	-	2.0%	-	-	-	6.0%	1.0%	-	-	3.0%	4.0%	-	-
Mail order/catalog	1	0	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0
	1.0%	-	3.0%	-	-	1.0%	-	-	-	-	-	2.0%	-	3.0%	-	-	-
Hardware store (e.g. True Value)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pharmacy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other	1	1	0	0	0	0	0	0	1	0	1	0	0	0	1	0	0
	1.0%	3.0%	-	-	-	-	-	-	8.0%	-	1.0%	-	-	-	2.0%	-	-
Don't know	1	0	0	1	0	0	0	0	1	0	0	1	1	0	0	0	0
	1.0%	-	-	1.0%	-	-	-	-	8.0%	-	-	2.0%	3.0%	-	-	-	-
Sigma	167	36	34	79	18	146	5	4	12	31	73	63	34	35	52	18	28
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

6A. RODENTICIDES

OVERVIEW

Among answering respondents, 34% report purchasing rodenticide products in 2016. Forty-seven percent of analyzed respondents indicate that they do not use rodenticides.

Table 6A-1. When was the Last Time you Bought Each of the Following Products? *Rodenticides (Mouse/Rat Poisons)*

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: All Respondents	1498	290	357	571	280	1328	55*	58*	57*	369	769	360	269	321	370	254	284
	516	91	113	209	103	455	23	13	25	138	228	150	92	97	127	90	110
Top 2 Box (Net)	34.0%	31.0%	32.0%	37.0%	37.0%	34.0%	42.0%	22.0%	44.0%	37.0%	30.0%	42.0%	34.0%	30.0%	34.0%	35.0%	39.0%
						g	G		G	J		J					M
	277	48	61	116	52	240	11	9	17	70	119	88	51	55	63	53	55
Less than 6 months ago	18.0%	17.0%	17.0%	20.0%	19.0%	18.0%	20.0%	16.0%	30.0%	19.0%	15.0%	24.0%	19.0%	17.0%	17.0%	21.0%	19.0%
									Eg			IJ					
	239	43	52	93	51	215	12	4	8	68	109	62	41	42	64	37	55
6 months to 1 year ago	16.0%	15.0%	15.0%	16.0%	18.0%	16.0%	22.0%	7.0%	14.0%	18.0%	14.0%	17.0%	15.0%	13.0%	17.0%	15.0%	19.0%
						g	G			J							M
	982	199	244	362	177	873	32	45	32	231	541	210	177	224	243	164	174
Bottom 2 Box (Net)	66.0%	69.0%	68.0%	63.0%	63.0%	66.0%	58.0%	78.0%	56.0%	63.0%	70.0%	58.0%	66.0%	70.0%	66.0%	65.0%	61.0%
								eFH			IK			P			
	281	50	66	105	60	254	10	7	10	62	161	58	38	62	66	54	61
More than 1 year ago	19.0%	17.0%	18.0%	18.0%	21.0%	19.0%	18.0%	12.0%	18.0%	17.0%	21.0%	16.0%	14.0%	19.0%	18.0%	21.0%	21.0%
											k			I		L	L
	701	149	178	257	117	619	22	38	22	169	380	152	139	162	177	110	113
Do not use product	47.0%	51.0%	50.0%	45.0%	42.0%	47.0%	40.0%	66.0%	39.0%	46.0%	49.0%	42.0%	52.0%	50.0%	48.0%	43.0%	40.0%
		cD	D					EFH			K		oP	oP	P		
	1498	290	357	571	280	1328	55	58	57	369	769	360	269	321	370	254	284
Sigma	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base

GEOGRAPHIC REGION

Rodenticide use is fairly consistent across all regions with the highest use in the South and West, both accounting for 37% each. The lowest purchase incidence is in the Northeast, with 31%.

POPULATION DENSITY

With regard to population density, rural respondents are more likely to purchase rodenticides, with 42% of the respondents indicating purchases in 2016. Suburban respondents are the lowest purchasers of rodenticides, with 30%.

FAMILY INCOME

There is little income-based difference in the purchase of rodenticides in 2016, with the purchase incidence ranging between 30% and 39% for each income category.

BRAND RECOLLECTION

The most frequently mentioned brand in 2016 is D-CON, accounting for 45% of the responses when all products are combined. The primary product for the line is identified as D-CON Rats & Mice with 30%. Brand recognition for other products is limited, with (all products combined) Tomcat mentioned by 17%, Enforcer mentioned by 10%, and Victor mentioned by 11% of the respondents.

Table 6A-2: What Brand(s) of Rodenticides Did You Purchase? If Possible, Please Refer to the Container

	Region					Dwelling				Population density				Family income			
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
Base: Have Used Rodenticides (mouse/rat poisons) in the Past Year	516	91*	113	209	103	455	23**	13**	25**	138	228	150	92*	97*	127	90*	110
D-Con Mice & Rats	156	24	40	66	26	139	3	4	10	31	59	66	33	34	36	29	24
	30.0%	26.0%	35.0%	32.0%	25.0%	31.0%	13.0%	31.0%	40.0%	22.0%	26.0%	44.0%	36.0%	35.0%	28.0%	32.0%	22.0%
												IJ	P	P		p	
Glue Traps	97	19	23	42	13	85	4	2	6	26	44	27	20	18	21	20	18
	19.0%	21.0%	20.0%	20.0%	13.0%	19.0%	17.0%	15.0%	24.0%	19.0%	19.0%	18.0%	22.0%	19.0%	17.0%	22.0%	16.0%
D-Con Ultra Set Covered Mouse Trap	49	6	13	15	15	41	4	1	3	15	25	9	10	10	13	9	7
	9.0%	7.0%	12.0%	7.0%	15.0%	9.0%	17.0%	8.0%	12.0%	11.0%	11.0%	6.0%	11.0%	10.0%	10.0%	10.0%	6.0%
					aC												
Tomcat Pelleted Bait & Place Pacs	38	6	9	13	10	34	1	1	2	7	15	16	3	9	13	1	12
	7.0%	7.0%	8.0%	6.0%	10.0%	7.0%	4.0%	8.0%	8.0%	5.0%	7.0%	11.0%	3.0%	9.0%	10.0%	1.0%	11.0%
												I		IO	IO		LO
Ortho Home Defense MAX No Touch Bait Station	32	4	8	14	6	25	3	1	3	11	10	11	6	6	9	4	7
	6.0%	4.0%	7.0%	7.0%	6.0%	5.0%	13.0%	8.0%	12.0%	8.0%	4.0%	7.0%	7.0%	6.0%	7.0%	4.0%	6.0%
D-Con OTHER PRODUCT	32	6	9	11	6	31	0	0	1	12	13	7	5	3	6	7	11
	6.0%	7.0%	8.0%	5.0%	6.0%	7.0%	-	-	4.0%	9.0%	6.0%	5.0%	5.0%	3.0%	5.0%	8.0%	10.0%
																	m
Cooke Quick Kill Gopher Mix	29	5	4	9	11	27	1	1	0	16	11	2	3	6	10	4	6
	6.0%	5.0%	4.0%	4.0%	11.0%	6.0%	4.0%	8.0%	-	12.0%	5.0%	1.0%	3.0%	6.0%	8.0%	4.0%	5.0%
					BC					JK	k						
CyKill	27	5	4	10	8	24	1	1	1	13	12	2	3	7	7	2	8
	5.0%	5.0%	4.0%	5.0%	8.0%	5.0%	4.0%	8.0%	4.0%	9.0%	5.0%	1.0%	3.0%	7.0%	6.0%	2.0%	7.0%
										K	K						

(Continued)

6A-4 Rodenticides

Table 6A-2: What Brand(s) of Rodenticides Did You Purchase? If Possible, Please Refer to the Container

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/ trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Enforcer Rat Max	27	7	2	12	6	24	3	0	0	14	12	1	2	5	12	2	6
	5.0%	8.0%	2.0%	6.0%	6.0%	5.0%	13.0%	-	-	10.0%	5.0%	1.0%	2.0%	5.0%	9.0%	2.0%	5.0%
		B		b						JK	K				LO		
Tomcat Bait Chunx	26	7	3	11	5	23	1	1	1	7	14	5	4	2	9	4	7
	5.0%	8.0%	3.0%	5.0%	5.0%	5.0%	4.0%	8.0%	4.0%	5.0%	6.0%	3.0%	4.0%	2.0%	7.0%	4.0%	6.0%
		b													m		
Enforcer Mouse Max	25	6	5	10	4	21	4	0	0	10	9	6	4	4	7	5	5
	5.0%	7.0%	4.0%	5.0%	4.0%	5.0%	17.0%	-	-	7.0%	4.0%	4.0%	4.0%	4.0%	6.0%	6.0%	5.0%
Ortho Home Defense MAX Press 'N Set Mouse Trap	23	0	6	11	6	21	1	1	0	7	9	7	3	4	10	3	3
	4.0%	-	5.0%	5.0%	6.0%	5.0%	4.0%	8.0%	-	5.0%	4.0%	5.0%	3.0%	4.0%	8.0%	3.0%	3.0%
			A	A	A										p		
Just One Bite Rat & Mouse	17	3	4	6	4	14	3	0	0	8	6	3	4	1	7	3	2
	3.0%	3.0%	4.0%	3.0%	4.0%	3.0%	13.0%	-	-	6.0%	3.0%	2.0%	4.0%	1.0%	6.0%	3.0%	2.0%
										k					m		
Victor Rat & Mouse Pellets	17	0	6	6	5	16	1	0	0	5	12	0	0	2	7	3	5
	3.0%	-	5.0%	3.0%	5.0%	4.0%	4.0%	-	-	4.0%	5.0%	-	-	2.0%	6.0%	3.0%	5.0%
			A		A					K	K				L	I	L
Victor Fast Kill	17	3	5	5	4	15	1	0	1	7	6	4	5	2	7	2	1
	3.0%	3.0%	4.0%	2.0%	4.0%	3.0%	4.0%	-	4.0%	5.0%	3.0%	3.0%	5.0%	2.0%	6.0%	2.0%	1.0%
													p		p		
Rampage Bait Chunx	15	4	3	6	2	14	1	0	0	6	9	0	2	0	5	4	4
	3.0%	4.0%	3.0%	3.0%	2.0%	3.0%	4.0%	-	-	4.0%	4.0%	-	2.0%	-	4.0%	4.0%	4.0%
										K	K				M	M	m
Victor Live Mouse Trap	14	1	4	6	3	12	1	0	1	7	3	4	4	3	3	3	1
	3.0%	1.0%	4.0%	3.0%	3.0%	3.0%	4.0%	-	4.0%	5.0%	1.0%	3.0%	4.0%	3.0%	2.0%	3.0%	1.0%
										J							

(Continued)

Table 6A-2: What Brand(s) of Rodenticides Did You Purchase? If Possible, Please Refer to the Container

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Tomcat Mole & Gopher Repellent Granule	13	1	0	9	3	12	1	0	0	7	4	2	1	0	5	5	2
	3.0%	1.0%	-	4.0%	3.0%	3.0%	4.0%	-	-	5.0%	2.0%	1.0%	1.0%	-	4.0%	6.0%	2.0%
				8	b					jk					M	IM	
Havoc XT	13	2	2	6	3	12	0	1	0	7	4	2	2	1	4	2	4
	3.0%	2.0%	2.0%	3.0%	3.0%	3.0%	-	8.0%	-	5.0%	2.0%	1.0%	2.0%	1.0%	3.0%	2.0%	4.0%
										jk							
Ramik	11	3	2	3	3	10	1	0	0	3	6	2	1	2	4	2	2
	2.0%	3.0%	2.0%	1.0%	3.0%	2.0%	4.0%	-	-	2.0%	3.0%	1.0%	1.0%	2.0%	3.0%	2.0%	2.0%
Hawk Meal	11	1	1	3	6	8	2	1	0	5	6	0	1	1	5	1	3
	2.0%	1.0%	1.0%	1.0%	6.0%	2.0%	9.0%	8.0%	-	4.0%	3.0%	-	1.0%	1.0%	4.0%	1.0%	3.0%
					aBC					K	K						
Hawk Pelleted Bait & Place Pacs	10	1	4	3	2	8	1	0	1	6	2	2	3	1	2	1	3
	2.0%	1.0%	4.0%	1.0%	2.0%	2.0%	4.0%	-	4.0%	4.0%	1.0%	1.0%	3.0%	1.0%	2.0%	1.0%	3.0%
										J							
Tomcat Liquid Concentrate	10	3	1	3	3	10	0	0	0	3	7	0	1	1	5	1	2
	2.0%	3.0%	1.0%	1.0%	3.0%	2.0%	-	-	-	2.0%	3.0%	-	1.0%	1.0%	4.0%	1.0%	2.0%
										k	K						
Hawk Bait Chunx	10	1	1	2	6	9	0	1	0	5	3	2	1	1	5	2	1
	2.0%	1.0%	1.0%	1.0%	6.0%	2.0%	-	8.0%	-	4.0%	1.0%	1.0%	1.0%	1.0%	4.0%	2.0%	1.0%
					aBC												
Jaguar Pelleted Bait & Place Pacs	9	1	0	4	4	7	0	1	1	5	1	3	1	1	4	2	1
	2.0%	1.0%	-	2.0%	4.0%	2.0%	-	8.0%	4.0%	4.0%	0	2.0%	1.0%	1.0%	3.0%	2.0%	1.0%
					B					J							
Jaguar Bait Chunx	9	1	1	5	2	6	2	1	0	5	4	0	3	1	3	1	1
	2.0%	1.0%	1.0%	2.0%	2.0%	1.0%	9.0%	8.0%	-	4.0%	2.0%	-	3.0%	1.0%	2.0%	1.0%	1.0%
										K							

(Continued)

6A-6 Rodenticides

Table 6A-2: What Brand(s) of Rodenticides Did You Purchase? If Possible, Please Refer to the Container																	
	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Sweeney's Mole & Gopher Poison Peanuts	8	1	1	3	3	6	2	0	0	4	4	0	0	1	5	1	1
	2.0%	1.0%	1.0%	1.0%	3.0%	1.0%	9.0%	-	-	3.0%	2.0%	-	-	1.0%	4.0%	1.0%	1.0%
Rampage Pelleted Bait & Place Pacs	6	3	1	1	1	6	0	0	0	3	3	0	0	1	2	1	2
	1.0%	3.0%	1.0%	0	1.0%	1.0%	-	-	-	2.0%	1.0%	-	-	1.0%	2.0%	1.0%	2.0%
JT Eason StickEm Mouse Glue Trap	6	0	1	3	2	5	0	1	0	2	4	0	0	1	2	2	1
	1.0%	-	1.0%	1.0%	2.0%	1.0%	-	8.0%	-	1.0%	2.0%	-	-	1.0%	2.0%	2.0%	1.0%
JT Eaton StickEm	6	1	1	2	2	5	1	0	0	3	1	2	2	1	1	2	0
	1.0%	1.0%	1.0%	1.0%	2.0%	1.0%	4.0%	-	-	2.0%	0	1.0%	2.0%	1.0%	1.0%	2.0%	-
Motomco Gopher Killer	5	0	1	3	1	4	1	0	0	4	1	0	1	1	2	0	1
	1.0%	-	1.0%	1.0%	1.0%	1.0%	4.0%	-	-	3.0%	0	-	1.0%	1.0%	2.0%	-	1.0%
Prozap Mole & Gopher Bait	5	1	1	1	2	5	0	0	0	2	3	0	0	0	5	0	0
	1.0%	1.0%	1.0%	0	2.0%	1.0%	-	-	-	1.0%	1.0%	-	-	-	4.0%	-	-
Sweeney's Mole & Gopher Repellent Granules	5	1	0	1	3	5	0	0	0	2	2	1	1	0	4	0	0
	1.0%	1.0%	-	0	3.0%	1.0%	-	-	-	1.0%	1.0%	1.0%	1.0%	-	3.0%	-	-
Victor Power Kill	4	0	2	0	2	2	1	0	1	4	0	0	2	0	1	0	1
	1.0%	-	2.0%	-	2.0%	0	4.0%	-	4.0%	3.0%	-	-	2.0%	-	1.0%	-	1.0%
Victor OTHER PRODUCT	4	0	1	1	2	3	1	0	0	3	1	0	0	2	1	0	1
	1.0%	-	1.0%	0	2.0%	1.0%	4.0%	-	-	2.0%	0	-	-	2.0%	1.0%	-	1.0%
(Continued)																	

Table 6A-2: What Brand(s) of Rodenticides Did You Purchase? If Possible, Please Refer to the Container

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Sweeney's Mole & Gopher Repellent Spray	3	1	1	0	1	3	0	0	0	2	1	0	1	0	1	0	1
	1.0%	1.0%	1.0%	-	1.0%	1.0%	-	-	-	1.0%	0	-	1.0%	-	1.0%	-	1.0%
Jaguar Soft Bait	3	1	0	1	1	3	0	0	0	1	2	0	0	0	3	0	0
	1.0%	1.0%	-	0	1.0%	1.0%	-	-	-	1.0%	1.0%	-	-	-	2.0%	-	-
Sweeney's Mole & Gopher Sonic Spikes	2	0	0	1	1	2	0	0	0	1	1	0	0	0	1	1	0
	0	-	-	0	1.0%	0	-	-	-	1.0%	0	-	-	-	1.0%	1.0%	-
Other	11	2	1	6	2	11	0	0	0	3	2	6	2	3	4	1	1
	2.0%	2.0%	1.0%	3.0%	2.0%	2.0%	-	-	-	2.0%	1.0%	4.0%	2.0%	3.0%	3.0%	1.0%	1.0%
Don't know	50	13	9	20	8	38	5	4	3	10	26	14	12	6	16	7	9
	10.0%	14.0%	8.0%	10.0%	8.0%	8.0%	22.0%	31.0%	12.0%	7.0%	11.0%	9.0%	13.0%	6.0%	13.0%	8.0%	8.0%
Sigma	855	144	180	334	197	746	51	23	35	292	357	206	146	141	267	137	164
	166.0%	158.0%	159.0%	160.0%	191.0%	164.0%	222.0%	177.0%	140.0%	212.0%	157.0%	137.0%	159.0%	145.0%	210.0%	152.0%	149.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

PRODUCT FORM

Rodenticide products in bait packets are the primary product form purchased in 2016, accounting for 54% of the responses. Loose grain bait products follow, accounting for 29% of the responses. Bait packets are preferred by rural residents—62% of rural respondents report their purchase, followed by 52% in suburban areas, and 49% in urban areas. Liquid rodenticides rank third with 18%.

Table 6A-3: What Form was the Rodenticides?

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used Rodenticides (mouse/rat poisons) in the Past Year	516	91*	113	209	103	455	23**	13**	25**	138	228	150	92*	97*	127	90*	110
Bait packet	280	42	71	119	48	250	11	7	12	68	119	93	54	58	64	43	61
	54.0%	46.0%	63.0%	57.0%	47.0%	55.0%	48.0%	54.0%	48.0%	49.0%	52.0%	62.0%	59.0%	60.0%	50.0%	48.0%	55.0%
Loose grain bait			AD	ad								IJ					
	152	25	28	68	31	137	7	2	6	48	64	40	23	30	41	27	31
	29.0%	27.0%	25.0%	33.0%	30.0%	30.0%	30.0%	15.0%	24.0%	35.0%	28.0%	27.0%	25.0%	31.0%	32.0%	30.0%	28.0%
Liquid	78	13	12	37	16	71	5	1	1	36	31	11	9	12	17	19	21
	15.0%	14.0%	11.0%	18.0%	16.0%	16.0%	22.0%	8.0%	4.0%	26.0%	14.0%	7.0%	10.0%	12.0%	13.0%	21.0%	19.0%
Gas/smoke bomb				b						JK	k					L	I
	65	15	10	23	17	59	1	2	3	29	28	8	5	5	22	13	20
	13.0%	16.0%	9.0%	11.0%	17.0%	13.0%	4.0%	15.0%	12.0%	21.0%	12.0%	5.0%	5.0%	5.0%	17.0%	14.0%	18.0%
Other				b						JK	K				LM	LM	LM
	24	4	6	10	4	21	0	2	1	5	11	8	4	3	7	7	3
	5.0%	4.0%	5.0%	5.0%	4.0%	5.0%	-	15.0%	4.0%	4.0%	5.0%	5.0%	4.0%	3.0%	6.0%	8.0%	3.0%
Don't know	39	8	11	12	8	31	3	1	4	6	22	11	13	8	10	6	2
	8.0%	9.0%	10.0%	6.0%	8.0%	7.0%	13.0%	8.0%	16.0%	4.0%	10.0%	7.0%	14.0%	8.0%	8.0%	7.0%	2.0%
Sigma										i			P	P	P	p	
	638	107	138	269	124	569	27	15	27	192	275	171	108	116	161	115	138
	124.0%	118.0%	122.0%	129.0%	120.0%	125.0%	117.0%	115.0%	108.0%	139.0%	121.0%	114.0%	117.0%	120.0%	127.0%	128.0%	125.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

RETAIL OUTLET

Discount/mass-merchandise stores and home improvement centers are the primary retail outlets for the purchase of rodenticides, accounting for 32% and 30% of the responses, respectively. Other frequently cited retail outlets are hardware stores, with 8%, farm supply stores, with 7%, supermarkets and grocery stores, with 5%, and lawn and garden centers with 4% of the responses.

Table 6A-4: What Place are Each of the Following Purchased Most Often? "Rodenticides (Mouse/Rat Poisons)"

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used 'Rodenticides (mouse/rat poisons)' in Past Year	516	91*	113	209	103	455	23**	13**	25**	138	228	150	92*	97*	127	90*	110
Discount/mass merchandise store (e.g. Wal-Mart, Kmart)	165	17	41	79	28	139	5	7	14	40	59	66	41	33	35	26	30
	32.0%	19.0%	36.0%	38.0%	27.0%	31.0%	22.0%	54.0%	56.0%	29.0%	26.0%	44.0%	45.0%	34.0%	28.0%	29.0%	27.0%
Home improvement center (e.g. Home Depot, Lowes)		A	Ad									IJ	NOP				
	155	33	30	61	31	140	7	3	5	39	84	32	21	29	38	35	32
	30.0%	36.0%	27.0%	29.0%	30.0%	31.0%	30.0%	23.0%	20.0%	28.0%	37.0%	21.0%	23.0%	30.0%	30.0%	39.0%	29.0%
Hardware store (e.g. True Value)																	
	40	5	13	10	12	37	3	0	0	12	17	11	6	11	7	7	9
	8.0%	5.0%	12.0%	5.0%	12.0%	8.0%	13.0%	-	-	9.0%	7.0%	7.0%	7.0%	11.0%	6.0%	8.0%	8.0%
Farm supply store		C		C													
	38	4	8	20	6	33	2	1	2	7	14	17	4	11	12	4	7
	7.0%	4.0%	7.0%	10.0%	6.0%	7.0%	9.0%	8.0%	8.0%	5.0%	6.0%	11.0%	4.0%	11.0%	9.0%	4.0%	6.0%
Supermarket/grocery store												ij		lo			
	25	6	4	9	6	23	0	0	2	6	11	8	4	3	4	5	9
	5.0%	7.0%	4.0%	4.0%	6.0%	5.0%	-	-	8.0%	4.0%	5.0%	5.0%	4.0%	3.0%	3.0%	6.0%	8.0%
n																	
(Continued)																	

Table 6A-4: What Place are Each of the Following Purchased Most Often? *Rodenticides (Mouse/Rat Poisons)

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Lawn and garden center/nursery	23	10	4	4	5	23	0	0	0	8	12	3	5	1	11	2	4
	4.0%	11.0%	4.0%	2.0%	5.0%	5.0%	-	-	-	6.0%	5.0%	2.0%	5.0%	1.0%	9.0%	2.0%	4.0%
		BC								k			m		Mo		
Warehouse/wholesale club	22	6	4	8	4	20	2	0	0	11	9	2	4	2	7	5	4
	4.0%	7.0%	4.0%	4.0%	4.0%	4.0%	9.0%	-	-	8.0%	4.0%	1.0%	4.0%	2.0%	6.0%	6.0%	4.0%
										k							
Mail order/catalog	12	4	1	5	2	11	1	0	0	7	3	2	0	1	2	4	5
	2.0%	4.0%	1.0%	2.0%	2.0%	2.0%	4.0%	-	-	5.0%	1.0%	1.0%	-	1.0%	2.0%	4.0%	5.0%
										Jk						L	L
Other	21	4	3	7	7	18	1	1	1	3	13	5	5	4	6	1	5
	4.0%	4.0%	3.0%	3.0%	7.0%	4.0%	4.0%	8.0%	4.0%	2.0%	6.0%	3.0%	5.0%	4.0%	5.0%	1.0%	5.0%
Don't know	15	2	5	6	2	11	2	1	1	5	6	4	2	2	5	1	5
	3.0%	2.0%	4.0%	3.0%	2.0%	2.0%	9.0%	8.0%	4.0%	4.0%	3.0%	3.0%	2.0%	2.0%	4.0%	1.0%	5.0%
Sigma	516	91	113	209	103	455	23	13	25	138	228	150	92	97	127	90	110
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

PRODUCT USAGE

Seventy-six percent of the respondents indicate that the rodenticide was purchased for the elimination of mice. Regionally, use of the purchased product to eliminate mice was highest in the Midwest with 87%. Respondents also indicate using purchased rodenticides to eliminate rats, accounting for 32%. Use of purchased rodenticides for rat elimination is most prominent in the West, with 39%, and lowest in the Midwest, with 19%. Purchases to control mice are fairly even across higher income levels, but top out at 82% for the lowest income bracket of \$25,000 and less.

Table 6A-5: What Problem were you Trying to Eliminate?

	Total	Region				Dwelling				Population density			Family income				
		Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used Rodenticides (mouse/rat poisons) in the Past Year	516	91*	113	209	103	455	23**	13**	25**	138	228	150	92*	97*	127	90*	110
Mice	394	64	98	160	72	349	13	10	22	90	177	127	75	75	93	69	82
	76.0%	70.0%	87.0%	77.0%	70.0%	77.0%	57.0%	77.0%	88.0%	65.0%	78.0%	85.0%	82.0%	77.0%	73.0%	77.0%	75.0%
Rats	ACD										I	Ij					
	163	23	21	79	40	139	8	8	8	57	60	46	31	32	37	29	34
Moles	32.0%	25.0%	19.0%	38.0%	39.0%	31.0%	35.0%	62.0%	32.0%	41.0%	26.0%	31.0%	34.0%	33.0%	29.0%	32.0%	31.0%
	AB				AB						Jk						
Squirrels raccoons	85	17	17	31	20	79	5	1	0	30	33	22	15	12	27	15	16
	16.0%	19.0%	15.0%	15.0%	19.0%	17.0%	22.0%	8.0%	-	22.0%	14.0%	15.0%	16.0%	12.0%	21.0%	17.0%	15.0%
Other											J	m					
	46	9	8	24	5	39	5	2	0	20	21	5	2	5	16	9	14
Don't know	9.0%	10.0%	7.0%	11.0%	5.0%	9.0%	22.0%	15.0%	-	14.0%	9.0%	3.0%	2.0%	5.0%	13.0%	10.0%	13.0%
	d										K	K	Lm				
Sigma	6	1	1	1	3	6	0	0	0	2	1	3	2	1	1	1	1
	1.0%	1.0%	1.0%	0	3.0%	1.0%	-	-	-	1.0%	0	2.0%	2.0%	1.0%	1.0%	1.0%	1.0%
Don't know	c																
	19	4	1	9	5	18	0	1	0	5	11	3	1	3	6	5	4
Sigma	4.0%	4.0%	1.0%	4.0%	5.0%	4.0%	-	8.0%	-	4.0%	5.0%	2.0%	1.0%	3.0%	5.0%	6.0%	4.0%
	b				b												
Sigma	713	118	146	304	145	630	31	22	30	204	303	206	126	128	180	128	151
	138.0%	130.0%	129.0%	145.0%	141.0%	138.0%	135.0%	169.0%	120.0%	148.0%	133.0%	137.0%	137.0%	132.0%	142.0%	142.0%	137.0%

Proportions/Means: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

6B. INSECT REPELLENTS

OVERVIEW

Overall, 59% of the respondents report purchasing insect repellent products in 2016. Twenty-four percent of the total answering respondents did not use insect repellents. Regionally, 30% of respondents in the Northeast report no use of insect repellents, while only 24% of respondents in the Midwest, 27% in the West, and 19% in the South report no use.

Table 6B-1: When was the Last Time you Bought Each of the Following Products? "Insect Repellents"

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/t trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: All Respondents	1498	290	357	571	280	1328	55*	58*	57*	369	769	360	269	321	370	254	284
Top 2 Box (Net)	889	151	214	373	151	788	35	27	39	219	438	232	133	188	227	162	179
	59.0%	52.0%	60.0%	65.0%	54.0%	59.0%	64.0%	47.0%	68.0%	59.0%	57.0%	64.0%	49.0%	59.0%	61.0%	64.0%	63.0%
Less than 6 months ago			A	AbD		g	g		G			J		L	L	L	L
	473	70	103	220	80	419	18	12	24	115	247	111	65	94	121	88	105
	32.0%	24.0%	29.0%	39.0%	29.0%	32.0%	33.0%	21.0%	42.0%	31.0%	32.0%	31.0%	24.0%	29.0%	33.0%	35.0%	37.0%
6 months to 1 year ago			ABD			g			eG						L	L	LM
	416	81	111	153	71	369	17	15	15	104	191	121	68	94	106	74	74
	28.0%	28.0%	31.0%	27.0%	25.0%	28.0%	31.0%	26.0%	26.0%	28.0%	25.0%	34.0%	25.0%	29.0%	29.0%	29.0%	26.0%
Bottom 2 Box (Net)											J						
	609	139	143	198	129	540	20	31	18	150	331	128	136	133	143	92	105
	41.0%	48.0%	40.0%	35.0%	46.0%	41.0%	36.0%	53.0%	32.0%	41.0%	43.0%	36.0%	51.0%	41.0%	39.0%	36.0%	37.0%
More than 1 year ago		BC	c		C			efH			K		MNOP				
	250	53	56	87	54	226	10	9	5	57	140	53	43	59	64	40	44
	17.0%	18.0%	16.0%	15.0%	19.0%	17.0%	18.0%	16.0%	9.0%	15.0%	18.0%	15.0%	16.0%	18.0%	17.0%	16.0%	15.0%
Do not use product																	
	359	86	87	111	75	314	10	22	13	93	191	75	93	74	79	52	61
	24.0%	30.0%	24.0%	19.0%	27.0%	24.0%	18.0%	38.0%	23.0%	25.0%	25.0%	21.0%	35.0%	23.0%	21.0%	20.0%	21.0%
Sigma		C	c		C			EFh					MNOP				
	1498	290	357	571	280	1328	55	58	57	369	769	360	269	321	370	254	284
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base

GEOGRAPHIC REGION

Purchase incidence for insect repellents is highest in the South, where 65% of respondents report their purchase, and the lowest in the Northeast where 52% report their use.

POPULATION DENSITY

Respondents in rural and urban areas had the highest purchase incidence of insect repellents, with 64%, in 2016.

FAMILY INCOME

Respondents' income levels appear to have an impact on the purchase of insect repellents in 2016, with purchase incidence ranging from 63% to 64% at higher income levels, down to 49% at the lowest income level.

BRAND RECOLLECTION

Off! is the most frequently purchased insect repellent in 2016, accounting for 73% (all products combined) of the reported insect repellants. Deep Woods Off! ranks as the leading Off! sub-brand, with 32% of respondents reporting purchase. Cutter (all products combined) ranks second with 34%.

Table 6B-2: What Brand(s) of Insect Repellents did you Purchase? If Possible, Please Refer to the Container.

	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
Base: Have Used Insect Repellents in the Past Year	889	151	214	373	151	788	35*	27**	39 *	219	438	232	133	188	227	162	179
OFF (Net)	652	111	167	265	109	576	28	21	27	147	331	174	92	138	176	121	125
	73.0%	74.0%	78.0%	71.0%	72.0%	73.0%	80.0%	78.0%	69.0%	67.0%	76.0%	75.0%	69.0%	73.0%	78.0%	75.0%	70.0%
	c										I		i	Ip			
Deep Woods	288	49	85	122	32	254	11	12	11	66	132	90	47	63	77	50	51
	32.0%	32.0%	40.0%	33.0%	21.0%	32.0%	31.0%	44.0%	28.0%	30.0%	30.0%	39.0%	35.0%	34.0%	34.0%	31.0%	28.0%
	D		cD		D	ij											
Active	153	21	33	58	41	136	7	10	0	48	79	26	17	29	39	26	42
	17.0%	14.0%	15.0%	16.0%	27.0%	17.0%	20.0%	37.0%	-	22.0%	18.0%	11.0%	13.0%	15.0%	17.0%	16.0%	23.0%
					ABC	H	H			K	K	Lmo					
Backyard	146	30	40	54	22	124	11	5	6	36	77	33	21	35	39	29	22
	16.0%	20.0%	19.0%	14.0%	15.0%	16.0%	31.0%	19.0%	15.0%	16.0%	18.0%	14.0%	16.0%	19.0%	17.0%	18.0%	12.0%
	E													p			
Clip On	89	16	26	35	12	76	3	4	6	24	42	23	13	19	21	21	15
	10.0%	11.0%	12.0%	9.0%	8.0%	10.0%	9.0%	15.0%	15.0%	11.0%	10.0%	10.0%	10.0%	10.0%	9.0%	13.0%	8.0%
Deep Woods Sportsman	88	8	26	35	19	78	2	3	5	21	42	25	19	14	24	14	17
	10.0%	5.0%	12.0%	9.0%	13.0%	10.0%	6.0%	11.0%	13.0%	10.0%	10.0%	11.0%	14.0%	7.0%	11.0%	9.0%	9.0%
	A				A		M										
Family Care	83	14	29	32	8	69	6	2	6	24	43	16	15	13	26	13	16
	9.0%	9.0%	14.0%	9.0%	5.0%	9.0%	17.0%	7.0%	15.0%	11.0%	10.0%	7.0%	11.0%	7.0%	11.0%	8.0%	9.0%
	cD				e												
Citronella	77	8	17	38	14	67	3	2	5	21	37	19	9	14	20	18	16
	9.0%	5.0%	8.0%	10.0%	9.0%	9.0%	9.0%	7.0%	13.0%	10.0%	8.0%	8.0%	7.0%	7.0%	9.0%	11.0%	9.0%
	a																

(Continued)

Table 6B-2: What Brand(s) of Insect Repellents did you Purchase? If Possible, Please Refer to the Container

	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Mosquito Coil	51	7	13	21	10	42	4	0	5	20	18	13	10	12	16	6	7
	6.0%	5.0%	6.0%	6.0%	7.0%	5.0%	11.0%	-	13.0%	9.0%	4.0%	6.0%	8.0%	6.0%	7.0%	4.0%	4.0%
									E	J							
Mosquito Lamp	38	9	12	11	6	29	8	0	1	11	19	8	6	8	10	8	6
	4.0%	6.0%	6.0%	3.0%	4.0%	4.0%	23.0%	-	3.0%	5.0%	4.0%	3.0%	5.0%	4.0%	4.0%	5.0%	3.0%
							EH										
Cutter (Net)	304	50	79	134	41	261	18	9	16	77	146	81	44	69	75	57	59
	34.0%	33.0%	37.0%	36.0%	27.0%	33.0%	51.0%	33.0%	41.0%	35.0%	33.0%	35.0%	33.0%	37.0%	33.0%	35.0%	33.0%
			d	d			E										
Backwoods	133	23	32	57	21	119	5	4	5	30	63	40	17	32	40	14	30
	15.0%	15.0%	15.0%	15.0%	14.0%	15.0%	14.0%	15.0%	13.0%	14.0%	14.0%	17.0%	13.0%	17.0%	18.0%	9.0%	17.0%
														O	O		O
Sport	85	14	24	33	14	72	5	5	3	25	38	22	13	9	18	18	27
	10.0%	9.0%	11.0%	9.0%	9.0%	9.0%	14.0%	19.0%	8.0%	11.0%	9.0%	9.0%	10.0%	5.0%	8.0%	11.0%	15.0%
													m			M	MN
All Family	70	12	21	30	7	57	4	2	7	17	35	18	14	15	21	12	8
	8.0%	8.0%	10.0%	8.0%	5.0%	7.0%	11.0%	7.0%	18.0%	8.0%	8.0%	8.0%	11.0%	8.0%	9.0%	7.0%	4.0%
			d						E				P		p		
Skinsations	39	6	11	17	5	34	3	0	2	15	16	8	4	9	8	12	6
	4.0%	4.0%	5.0%	5.0%	3.0%	4.0%	9.0%	-	5.0%	7.0%	4.0%	3.0%	3.0%	5.0%	4.0%	7.0%	3.0%
										j						lnp	
EcoSmart Insect Repellent	22	6	7	6	3	19	2	1	0	8	9	5	2	3	9	5	3
	2.0%	4.0%	3.0%	2.0%	2.0%	2.0%	6.0%	4.0%	-	4.0%	2.0%	2.0%	2.0%	2.0%	4.0%	3.0%	2.0%
Mosquito Magnet	21	5	4	9	3	14	5	1	1	9	11	1	2	9	3	3	4
	2.0%	3.0%	2.0%	2.0%	2.0%	2.0%	14.0%	4.0%	3.0%	4.0%	3.0%	0	2.0%	5.0%	1.0%	2.0%	2.0%
							Eh			K	k			N			

(Continued)

Table 6B-2: What Brand(s) of Insect Repellents did you Purchase? If Possible, Please Refer to the Container.

	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Herbal Armor	16	4	5	6	1	15	1	0	0	10	4	2	3	1	6	2	4
	2.0%	3.0%	2.0%	2.0%	1.0%	2.0%	3.0%	-	-	5.0%	1.0%	1.0%	2.0%	1.0%	3.0%	1.0%	2.0%
	JK										m						
Alternative	14	1	4	6	3	11	1	1	1	10	2	2	2	2	4	3	3
	2.0%	1.0%	2.0%	2.0%	2.0%	1.0%	3.0%	4.0%	3.0%	5.0%	0	1.0%	2.0%	1.0%	2.0%	2.0%	2.0%
	JK																
Mega Catch	6	1	1	2	2	5	1	0	0	3	3	0	0	0	3	2	1
	1.0%	1.0%	0	1.0%	1.0%	1.0%	3.0%	-	-	1.0%	1.0%	-	-	-	1.0%	1.0%	1.0%
	k																
Avon Skin So Soft Bug Guard Plus (Net)	209	41	36	95	37	179	19	7	4	78	92	39	31	39	55	36	48
	24.0%	27.0%	17.0%	25.0%	25.0%	23.0%	54.0%	26.0%	10.0%	36.0%	21.0%	17.0%	23.0%	21.0%	24.0%	22.0%	27.0%
	B					B	b	h	EH	JK							
Anti-Itch Spray	72	15	9	38	10	59	10	2	1	25	28	19	11	16	19	11	15
	8.0%	10.0%	4.0%	10.0%	7.0%	7.0%	29.0%	7.0%	3.0%	11.0%	6.0%	8.0%	8.0%	9.0%	8.0%	7.0%	8.0%
	B					B	EH			J							
Burt's Bees Herbal Insect Repellent	47	7	11	20	9	40	3	2	2	16	21	10	11	8	13	5	10
	5.0%	5.0%	5.0%	5.0%	6.0%	5.0%	9.0%	7.0%	5.0%	7.0%	5.0%	4.0%	8.0%	4.0%	6.0%	3.0%	6.0%
	o																
Picaridin Spray	35	9	7	12	7	30	3	1	1	14	15	6	5	6	8	5	11
	4.0%	6.0%	3.0%	3.0%	5.0%	4.0%	9.0%	4.0%	3.0%	6.0%	3.0%	3.0%	4.0%	3.0%	4.0%	3.0%	6.0%
	jk																
IR3535 Expedition	34	8	4	12	10	30	3	1	0	21	11	2	1	8	12	4	9
	4.0%	5.0%	2.0%	3.0%	7.0%	4.0%	9.0%	4.0%	-	10.0%	3.0%	1.0%	1.0%	4.0%	5.0%	2.0%	5.0%
	b					Bc		h	JK					I	L	L	
Picaridin Towelettes	34	5	8	14	7	29	3	1	1	12	17	5	3	3	10	9	9
	4.0%	3.0%	4.0%	4.0%	5.0%	4.0%	9.0%	4.0%	3.0%	5.0%	4.0%	2.0%	2.0%	2.0%	4.0%	6.0%	5.0%
	k										M						

(Continued)

Table 6B-2: What Brand(s) of Insect Repellents did you Purchase? If Possible, Please Refer to the Container.

	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Ben's 100 Max Formula Insect Repellent	26	3	8	10	5	23	1	1	1	11	13	2	4	2	6	4	10
	3.0%	2.0%	4.0%	3.0%	3.0%	3.0%	3.0%	4.0%	3.0%	5.0%	3.0%	1.0%	3.0%	1.0%	3.0%	2.0%	6.0%
										K	k		M				
Ben's 30 Insect Repellent	24	5	4	11	4	20	2	2	0	11	11	2	3	0	9	8	4
	3.0%	3.0%	2.0%	3.0%	3.0%	3.0%	6.0%	7.0%	-	5.0%	3.0%	1.0%	2.0%	-	4.0%	5.0%	2.0%
										JK			M	M		M	M
Ben's Tick & Insect Repellent Wipes	18	2	4	11	1	16	2	0	0	7	9	2	1	1	4	7	5
	2.0%	1.0%	2.0%	3.0%	1.0%	2.0%	6.0%	-	-	3.0%	2.0%	1.0%	1.0%	1.0%	2.0%	4.0%	3.0%
										k							IM
Coulston Repellent	7	3	1	1	2	7	0	0	0	3	3	1	1	1	3	2	0
	1.0%	2.0%	0	0	1.0%	1.0%	-	-	-	1.0%	1.0%	0	1.0%	1.0%	1.0%	1.0%	-
	C																
Repel (Net)	134	27	27	56	24	109	16	4	5	39	70	25	26	23	35	23	27
	15.0%	18.0%	13.0%	15.0%	16.0%	14.0%	46.0%	15.0%	13.0%	18.0%	16.0%	11.0%	20.0%	12.0%	15.0%	14.0%	15.0%
	EH									K	k		m				
Sportsman	54	10	8	27	9	45	4	3	2	16	30	8	10	7	17	8	12
	6.0%	7.0%	4.0%	7.0%	6.0%	6.0%	11.0%	11.0%	5.0%	7.0%	7.0%	3.0%	8.0%	4.0%	7.0%	5.0%	7.0%
	b									k	k						
Lemon Eucalyptus	43	10	9	15	9	34	8	0	1	13	21	9	10	9	8	9	7
	5.0%	7.0%	4.0%	4.0%	6.0%	4.0%	23.0%	-	3.0%	6.0%	5.0%	4.0%	8.0%	5.0%	4.0%	6.0%	4.0%
	EH									n							
Mosquito Wipes	26	6	7	11	2	20	3	1	2	5	15	6	6	3	8	3	6
	3.0%	4.0%	3.0%	3.0%	1.0%	3.0%	9.0%	4.0%	5.0%	2.0%	3.0%	3.0%	5.0%	2.0%	4.0%	2.0%	3.0%
	E																
100	24	5	4	8	7	21	3	0	0	11	9	4	1	5	9	5	4
	3.0%	3.0%	2.0%	2.0%	5.0%	3.0%	9.0%	-	-	5.0%	2.0%	2.0%	1.0%	3.0%	4.0%	3.0%	2.0%
	Eh									Jk		I					
(Continued)																	

(Continued)

Table 6B-2: What Brand(s) of Insect Repellents did you Purchase? If Possible, Please Refer to the Container

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Sawyer (Net)	80	17	13	36	14	65	11	2	2	29	38	13	11	17	22	14	16
	9.0%	11.0%	6.0%	10.0%	9.0%	8.0%	31.0%	7.0%	5.0%	13.0%	9.0%	6.0%	8.0%	9.0%	10.0%	9.0%	9.0%
	b						EH			JK							
Maxi Deet	33	4	7	15	7	28	4	0	1	15	12	6	5	6	6	8	8
	4.0%	3.0%	3.0%	4.0%	5.0%	4.0%	11.0%	-	3.0%	7.0%	3.0%	3.0%	4.0%	3.0%	3.0%	5.0%	4.0%
							E			JK							
20% Picaridin	25	8	2	11	4	20	5	0	0	11	12	2	2	6	7	3	7
	3.0%	5.0%	1.0%	3.0%	3.0%	3.0%	14.0%	-	-	5.0%	3.0%	1.0%	2.0%	3.0%	3.0%	2.0%	4.0%
							EH			K							
Controlled Release Family	20	6	5	7	2	15	3	1	1	5	11	4	3	5	8	3	1
	2.0%	4.0%	2.0%	2.0%	1.0%	2.0%	9.0%	4.0%	3.0%	2.0%	3.0%	2.0%	2.0%	3.0%	4.0%	2.0%	1.0%
							E								P		
Ultra 30	11	2	1	4	4	9	1	1	0	4	6	1	1	2	5	2	1
	1.0%	1.0%	0	1.0%	3.0%	1.0%	3.0%	4.0%	-	2.0%	1.0%	0	1.0%	1.0%	2.0%	1.0%	1.0%
							b										
Other	19	6	3	6	4	16	0	1	2	4	8	7	7	1	4	3	4
	2.0%	4.0%	1.0%	2.0%	3.0%	2.0%	-	4.0%	5.0%	2.0%	2.0%	3.0%	5.0%	1.0%	2.0%	2.0%	2.0%
													Mn				
Don't know	77	16	9	34	18	62	4	3	8	17	34	26	19	14	22	9	13
	9.0%	11.0%	4.0%	9.0%	12.0%	8.0%	11.0%	11.0%	21.0%	8.0%	8.0%	11.0%	14.0%	7.0%	10.0%	6.0%	7.0%
													MOP				
Sigma	2048	364	501	839	344	1745	144	72	87	619	956	473	318	390	562	364	414
	230.0%	241.0%	234.0%	225.0%	228.0%	221.0%	411.0%	267.0%	223.0%	283.0%	218.0%	204.0%	239.0%	207.0%	248.0%	225.0%	231.0%

Proportions/Means: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

PRODUCT FORM

Aerosol and pump spray liquid are the most commonly purchased form of insect repellent, accounting for 62% and 25% of the responses in 2016, respectively. Candles follow with 15% of the responses. There are no major differences between population densities or income levels with regard to the product form that is preferred.

Table 6B-3: What Form was the Insect Repellent?

	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used Insect Repellents in the Past Year	889	151	214	373	151	788	35*	27**	39*	219	438	232	133	188	227	162	179
Aerosol	547	92	146	218	91	483	19	21	24	121	276	150	83	120	143	96	105
	62.0%	61.0%	68.0%	58.0%	60.0%	61.0%	54.0%	78.0%	62.0%	55.0%	63.0%	65.0%	62.0%	64.0%	63.0%	59.0%	59.0%
			C								i	I					
Pump spray liquid	222	32	58	94	38	198	8	7	9	52	115	55	27	45	56	44	50
	25.0%	21.0%	27.0%	25.0%	25.0%	25.0%	23.0%	26.0%	23.0%	24.0%	26.0%	24.0%	20.0%	24.0%	25.0%	27.0%	28.0%
Candle	133	21	30	66	16	116	3	6	8	39	62	32	20	27	33	24	29
	15.0%	14.0%	14.0%	18.0%	11.0%	15.0%	9.0%	22.0%	21.0%	18.0%	14.0%	14.0%	15.0%	14.0%	15.0%	15.0%	16.0%
				D													
Lotion	132	22	26	67	17	118	8	4	2	54	52	26	25	23	37	20	27
	15.0%	15.0%	12.0%	18.0%	11.0%	15.0%	23.0%	15.0%	5.0%	25.0%	12.0%	11.0%	19.0%	12.0%	16.0%	12.0%	15.0%
				bd		h	H			JK							
Lamp	83	19	20	25	19	70	8	2	3	23	47	13	11	13	19	20	20
	9.0%	13.0%	9.0%	7.0%	13.0%	9.0%	23.0%	7.0%	8.0%	11.0%	11.0%	6.0%	8.0%	7.0%	8.0%	12.0%	11.0%
		C			C		Eh			k	K					m	
Coil	60	7	13	30	10	53	2	0	5	24	19	17	12	10	21	8	9
	7.0%	5.0%	6.0%	8.0%	7.0%	7.0%	6.0%	-	13.0%	11.0%	4.0%	7.0%	9.0%	5.0%	9.0%	5.0%	5.0%
										J							

(Continued)

Table 6B-3: What Form was the Insect Repellent?

	Region					Dwelling			Mobile home/trailer	Population density			Family income				
	Total	Northeast	Midwest	South	West	One- family house	Two- family house	Three+ family house		Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Roll-on	41	10	9	17	5	38	2	1	0	18	19	4	5	9	9	9	9
	5.0%	7.0%	4.0%	5.0%	3.0%	5.0%	6.0%	4.0%	-	8.0%	4.0%	2.0%	4.0%	5.0%	4.0%	6.0%	5.0%
Towelette										JK	k						
	37	5	10	16	6	32	2	2	1	10	17	10	5	7	10	5	10
	4.0%	3.0%	5.0%	4.0%	4.0%	4.0%	6.0%	7.0%	3.0%	5.0%	4.0%	4.0%	4.0%	4.0%	4.0%	3.0%	6.0%
Stick	30	3	7	13	7	26	1	2	1	9	11	10	5	5	5	8	7
	3.0%	2.0%	3.0%	3.0%	5.0%	3.0%	3.0%	7.0%	3.0%	4.0%	3.0%	4.0%	4.0%	3.0%	2.0%	5.0%	4.0%
CO2 device	29	6	4	13	6	26	2	0	1	14	12	3	4	1	8	8	8
	3.0%	4.0%	2.0%	3.0%	4.0%	3.0%	6.0%	-	3.0%	6.0%	3.0%	1.0%	3.0%	1.0%	4.0%	5.0%	4.0%
Pad										JK			m		M	M	M
	19	8	2	6	3	14	5	0	0	7	8	4	1	1	7	6	4
	2.0%	5.0%	1.0%	2.0%	2.0%	2.0%	14.0%	-	-	3.0%	2.0%	2.0%	1.0%	1.0%	3.0%	4.0%	2.0%
Other		BC					EH								m	IM	
	20	5	6	5	4	16	0	1	3	6	6	8	7	4	2	3	4
	2.0%	3.0%	3.0%	1.0%	3.0%	2.0%	-	4.0%	8.0%	3.0%	1.0%	3.0%	5.0%	2.0%	1.0%	2.0%	2.0%
Don't know									E			j	N				
	21	6	3	10	2	16	2	0	3	5	8	8	7	7	5	1	1
	2.0%	4.0%	1.0%	3.0%	1.0%	2.0%	6.0%	-	8.0%	2.0%	2.0%	3.0%	5.0%	4.0%	2.0%	1.0%	1.0%
Sigma									E				OP	oP			
	1374	236	334	580	224	1206	62	46	60	382	652	340	212	272	355	252	283
	155.0%	156.0%	156.0%	155.0%	148.0%	153.0%	177.0%	170.0%	154.0%	174.0%	149.0%	147.0%	159.0%	145.0%	156.0%	156.0%	158.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

RETAIL OUTLET

Discount and mass-merchandise stores are the most frequently mentioned type of retail outlet for the purchase of insect repellents, accounting for 43% of the responses in 2016. Home improvement centers rank second with 26%, followed by supermarkets and lawn and garden centers with 8% and 6% of the responses, respectively. Families with income levels below \$25,000 and between \$25,000 and \$50,000 purchase more at discount and merchandise stores over home improvement centers.

PRODUCT USAGE

The majority of the respondents, or 87%, are attempting to repel mosquitoes with their purchased repellent. Flies, ticks, and gnats, with 30%, 28%, and 28%, respectively, are the other significant pests that respondents purchase insect repellent to treat.

Table 6B-4: What Place are Each of the Following Purchased Most Often? "Insect Repellents"

		Region				Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used 'Insect repellents' in Past Year	889	151	214	373	151	788	35*	27**	39*	219	438	232	133	188	227	162	179
Discount/mass merchandise store (e.g. Wal-Mart, Kmart)	380	46	100	169	65	328	13	16	23	84	177	119	71	95	97	53	64
	43.0%	30.0%	47.0%	45.0%	43.0%	42.0%	37.0%	59.0%	59.0%	38.0%	40.0%	51.0%	53.0%	51.0%	43.0%	33.0%	36.0%
		A	A	A					Ef			IJ	nOP	OP	O		
Home improvement center (e.g. Home Depot, Lowes)	228	41	48	102	37	215	4	5	4	60	119	49	20	37	62	59	50
	26.0%	27.0%	22.0%	27.0%	25.0%	27.0%	11.0%	19.0%	10.0%	27.0%	27.0%	21.0%	15.0%	20.0%	27.0%	36.0%	28.0%
						FH					k				Lm	LMnp	Lm

(Continued)

Table 6B-4: What Place are Each of the Following Purchased Most Often? "Insect Repellents"

	Region					Dwelling			Mobile home/trailer	Population density			Family income				
	Total	Northeast	Midwest	South	West	One- family house	Two- family house	Three+ family house		Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Supermarket/grocery store	67	16	17	23	11	57	5	2	3	16	37	14	11	17	10	14	15
	8.0%	11.0%	8.0%	6.0%	7.0%	7.0%	14.0%	7.0%	8.0%	7.0%	8.0%	6.0%	8.0%	9.0%	4.0%	9.0%	8.0%
	c													n		n	n
Lawn and garden center/nursery	49	15	10	15	9	45	3	0	1	16	28	5	8	9	18	8	6
	6.0%	10.0%	5.0%	4.0%	6.0%	6.0%	9.0%	-	3.0%	7.0%	6.0%	2.0%	6.0%	5.0%	8.0%	5.0%	3.0%
	bc									K	K				p		
Hardware store (e.g. True Value)	48	8	16	12	12	43	3	2	0	11	22	15	5	13	9	8	13
	5.0%	5.0%	7.0%	3.0%	8.0%	5.0%	9.0%	7.0%	-	5.0%	5.0%	6.0%	4.0%	7.0%	4.0%	5.0%	7.0%
			c		C		h										
Warehouse/wholesale club	24	4	5	10	5	20	2	0	2	11	7	6	2	1	6	4	11
	3.0%	3.0%	2.0%	3.0%	3.0%	3.0%	6.0%	-	5.0%	5.0%	2.0%	3.0%	2.0%	1.0%	3.0%	2.0%	6.0%
										J					m		LMno
Farm supply store	19	4	4	10	1	18	0	0	1	4	6	9	4	4	4	3	4
	2.0%	3.0%	2.0%	3.0%	1.0%	2.0%	-	-	3.0%	2.0%	1.0%	4.0%	3.0%	2.0%	2.0%	2.0%	2.0%
												J					
Mail order/catalog	14	2	2	9	1	8	2	1	3	4	8	2	1	3	6	2	2
	2.0%	1.0%	1.0%	2.0%	1.0%	1.0%	6.0%	4.0%	8.0%	2.0%	2.0%	1.0%	1.0%	2.0%	3.0%	1.0%	1.0%
							E		E								
Other	37	9	8	14	6	35	1	0	1	9	19	9	6	5	9	8	9
	4.0%	6.0%	4.0%	4.0%	4.0%	4.0%	3.0%	-	3.0%	4.0%	4.0%	4.0%	5.0%	3.0%	4.0%	5.0%	5.0%
Don't know	23	6	4	9	4	19	2	1	1	4	15	4	5	4	6	3	5
	3.0%	4.0%	2.0%	2.0%	3.0%	2.0%	6.0%	4.0%	3.0%	2.0%	3.0%	2.0%	4.0%	2.0%	3.0%	2.0%	3.0%
Sigma	889	151	214	373	151	788	35	27	39	219	438	232	133	188	227	162	179
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

Table 6B-5: What Pests Were you Trying to Get Rid of?

	Total	Region				Dwelling				Population density			Family income				
		Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used Insect Repellents in the Past Year	889	151	214	373	151	788	35*	27**	39*	219	438	232	133	188	227	162	179
Mosquitoes	776	129	195	324	128	691	29	24	32	179	395	202	109	167	200	145	155
	87.0%	85.0%	91.0%	87.0%	85.0%	88.0%	83.0%	89.0%	82.0%	82.0%	90.0%	87.0%	82.0%	89.0%	88.0%	90.0%	87.0%
		ad									I		I		I		
Flies	270	50	57	111	52	227	12	13	18	88	119	63	51	61	72	39	47
	30.0%	33.0%	27.0%	30.0%	34.0%	29.0%	34.0%	48.0%	46.0%	40.0%	27.0%	27.0%	38.0%	32.0%	32.0%	24.0%	26.0%
								E		JK			OP	o			
Ticks	246	49	56	109	32	217	9	11	9	59	115	72	42	55	59	34	56
	28.0%	32.0%	26.0%	29.0%	21.0%	28.0%	26.0%	41.0%	23.0%	27.0%	26.0%	31.0%	32.0%	29.0%	26.0%	21.0%	31.0%
		D		d									O	o			O
Gnats	245	43	49	107	46	219	7	10	9	65	117	63	34	54	64	44	49
	28.0%	28.0%	23.0%	29.0%	30.0%	28.0%	20.0%	37.0%	23.0%	30.0%	27.0%	27.0%	26.0%	29.0%	28.0%	27.0%	27.0%
Other	28	10	2	12	4	26	0	1	1	7	11	10	8	4	5	3	8
	3.0%	7.0%	1.0%	3.0%	3.0%	3.0%	-	4.0%	3.0%	3.0%	3.0%	4.0%	6.0%	2.0%	2.0%	2.0%	4.0%
		Bc		b									mno				
Don't know	19	3	6	6	4	18	0	0	1	3	10	6	3	5	5	4	2
	2.0%	2.0%	3.0%	2.0%	3.0%	2.0%	-	-	3.0%	1.0%	2.0%	3.0%	2.0%	3.0%	2.0%	2.0%	1.0%
Sigma	1584	284	365	669	266	1398	57	59	70	401	767	416	247	346	405	269	317
	178.0%	188.0%	171.0%	179.0%	176.0%	177.0%	163.0%	219.0%	179.0%	183.0%	175.0%	179.0%	186.0%	184.0%	178.0%	166.0%	177.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

6C. FUNGICIDES

OVERVIEW

Fungicides are products that treat mildew, blight, rust, mold, and other plant diseases. Use of these products is generally limited to a small group of knowledgeable gardeners, although some consumers also purchase lawn fungicides. In 2016, only 22% of the respondents report purchasing fungicides. Sixty-three percent of the answering respondents indicate that they did not purchase fungicides.

Table 6C.1: When was the Last Time you Bought Each of the Following Products? *Fungicides*																	
	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: All Respondents	1498	290	357	571	280	1328	55*	58*	57*	369	769	360	269	321	370	254	284
Top 2 Box (Net)	323	62	58	134	69	288	17	7	11	109	145	68	45	52	83	67	76
	22.0%	21.0%	16.0%	23.0%	25.0%	22.0%	31.0%	12.0%	19.0%	30.0%	19.0%	19.0%	17.0%	16.0%	22.0%	26.0%	27.0%
	b		B	B		g	G			JK					IM	LM	LM
Less than 6 months ago	127	28	20	57	22	110	9	4	4	46	54	27	20	18	36	25	28
	8.0%	10.0%	6.0%	10.0%	8.0%	8.0%	16.0%	7.0%	7.0%	12.0%	7.0%	8.0%	7.0%	6.0%	10.0%	10.0%	10.0%
	b		B				E			JK					M	m	M
6 months to 1 year ago	196	34	38	77	47	178	8	3	7	63	91	42	25	34	47	42	48
	13.0%	12.0%	11.0%	13.0%	17.0%	13.0%	15.0%	5.0%	12.0%	17.0%	12.0%	12.0%	9.0%	11.0%	13.0%	17.0%	17.0%
					aB	g	g			JK						LM	LM
Bottom 2 Box (Net)	1175	228	299	437	211	1040	38	51	46	260	624	291	224	269	287	187	208
	78.0%	79.0%	84.0%	77.0%	75.0%	78.0%	69.0%	88.0%	81.0%	70.0%	81.0%	81.0%	83.0%	84.0%	78.0%	74.0%	73.0%
			aCD					eF			I	I	nOP	NOP			
More than 1 year ago	231	44	56	80	51	206	11	3	11	52	123	56	27	43	57	53	51
	15.0%	15.0%	16.0%	14.0%	18.0%	16.0%	20.0%	5.0%	19.0%	14.0%	16.0%	16.0%	10.0%	13.0%	15.0%	21.0%	18.0%
						G	G		G						L	LMn	L
Do not use product	944	184	243	357	160	834	27	48	35	208	501	235	197	226	230	134	157
	63.0%	63.0%	68.0%	63.0%	57.0%	63.0%	49.0%	83.0%	61.0%	56.0%	65.0%	65.0%	73.0%	70.0%	62.0%	53.0%	55.0%
			cD			F		EFH			I	I	NOP	NOP	Op		
Sigma	1498	290	357	571	280	1328	55	58	57	369	769	360	269	321	370	254	284
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Proportions/Mean: Columns Tested (5% - 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base																	

Proportions/Means: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base

GEOGRAPHIC REGION

Purchase incidence for fungicides is slightly higher in the West, where 25% of the respondents report buying these products in the last year, and lowest among respondents in the Midwest, where 16% of respondents indicate purchase.

POPULATION DENSITY

The distribution of respondents using fungicides is lower for rural and suburban respondents, with 19% each, and highest for urban respondents with 30%.

FAMILY INCOME

The purchase of fungicides appears to vary little across income levels, with respondents with income levels between \$75,000 and \$100,000 and above \$100,000 accounting for 26% and 27% of the responses, respectively. Households with lower income levels range from 16% to 17% of the responses.

BRAND RECOLLECTION

Bayer Advanced is the most frequently mentioned brand of fungicide purchased, accounting for a combined 31% of the responses in 2016. It is followed by the Scotts and Ortho product lines with 25% and 22%, respectively. Scotts Lawn Fungus Control and Bayer Advanced Garden Disease Control for Roses, Flowers, and Shrubs are the leading individual products, each accounting for 13% of responses.

Table 6C-2: What Brand(s) of Fungicides did you Purchase? If Possible, Please Refer to the Container

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used Fungicides in the Past Year	323	62*	58*	134	69*	288	17**	7**	11**	109	145	69*	45*	52*	83*	67*	76*
Scotts Lawn Fungus Control	43 13.0%	9 15.0%	11 19.0%	19 14.0%	4 6.0%	37 13.0%	3 18.0%	1 14.0%	2 18.0%	12 11.0%	26 18.0%	5 7.0%	5 11.0%	3 6.0%	14 17.0%	9 13.0%	12 16.0%
Bayer Advanced Garden Disease Control for Roses, Flowers and Shrubs	41 13.0%	3 5.0%	6 10.0%	18 13.0%	14 20.0%	37 13.0%	2 12.0%	0 -	2 18.0%	17 16.0%	15 10.0%	9 13.0%	2 4.0%	9 17.0%	11 13.0%	6 9.0%	13 17.0%
Bayer Advanced Lawn Fungicide	34 11.0%	3 5.0%	10 17.0%	18 13.0%	3 4.0%	32 11.0%	1 6.0%	0 -	1 9.0%	11 10.0%	18 12.0%	5 7.0%	5 11.0%	6 12.0%	11 13.0%	2 3.0%	10 13.0%
Ortho MAX Garden Disease Control	30 9.0%	8 13.0%	4 7.0%	9 7.0%	9 13.0%	25 9.0%	1 6.0%	1 14.0%	3 27.0%	6 6.0%	14 10.0%	10 14.0%	3 7.0%	3 6.0%	8 10.0%	7 10.0%	9 12.0%
Actinovate Lawn and Garden Fungicide	28 9.0%	10 16.0%	4 7.0%	5 4.0%	9 13.0%	23 8.0%	4 24.0%	1 14.0%	0 -	15 14.0%	9 6.0%	4 6.0%	4 9.0%	4 8.0%	10 12.0%	3 4.0%	7 9.0%
Ortho Moss-B-Gon	27 8.0%	4 6.0%	6 10.0%	8 6.0%	9 13.0%	26 9.0%	1 6.0%	0 -	0 -	9 8.0%	14 10.0%	4 6.0%	3 7.0%	5 10.0%	5 6.0%	6 9.0%	8 11.0%
Dr. Earth Final Stop Disease Control Fungicide	24 7.0%	6 10.0%	4 7.0%	10 7.0%	4 6.0%	20 7.0%	3 18.0%	1 14.0%	0 -	14 13.0%	7 5.0%	3 4.0%	8 18.0%	3 6.0%	4 5.0%	7 10.0%	2 3.0%
Bayer Advanced Natria Disease Control	23 7.0%	4 6.0%	7 12.0%	8 6.0%	4 6.0%	21 7.0%	1 6.0%	1 14.0%	0 -	10 9.0%	11 8.0%	2 3.0%	1 2.0%	2 4.0%	8 10.0%	4 6.0%	8 11.0%
Bonide Infuse	21 7.0%	6 10.0%	3 5.0%	9 7.0%	3 4.0%	19 7.0%	2 12.0%	0 -	0 -	10 9.0%	10 7.0%	1 1.0%	0 -	4 8.0%	7 8.0%	5 7.0%	5 7.0%
Bonide Fung-onil	19 6.0%	5 8.0%	3 5.0%	8 6.0%	3 4.0%	15 5.0%	4 24.0%	0 -	0 -	13 12.0%	6 4.0%	0 -	5 11.0%	1 2.0%	6 7.0%	4 6.0%	3 4.0%
Scotts Moss Control Granules	19 6.0%	6 10.0%	6 10.0%	3 2.0%	4 6.0%	15 5.0%	3 18.0%	0 -	1 9.0%	9 8.0%	9 6.0%	1 1.0%	3 7.0%	3 6.0%	5 6.0%	4 6.0%	4 5.0%
Ecosmart Garden Fungicide	18 6.0%	4 6.0%	0 -	11 8.0%	3 4.0%	17 6.0%	0 -	1 14.0%	0 -	10 9.0%	6 4.0%	2 3.0%	4 9.0%	2 4.0%	3 4.0%	1 1.0%	8 11.0%
Green Light Fung-Away	18 6.0%	6 10.0%	2 3.0%	8 6.0%	2 3.0%	16 6.0%	2 12.0%	0 -	0 -	9 8.0%	8 6.0%	1 1.0%	1 2.0%	3 6.0%	2 2.0%	7 10.0%	5 7.0%
Scotts OTHER PRODUCT	18 6.0%	2 3.0%	4 7.0%	10 7.0%	2 3.0%	13 5.0%	2 12.0%	1 14.0%	2 18.0%	6 6.0%	10 7.0%	2 3.0%	3 7.0%	3 6.0%	8 10.0%	0 -	4 5.0%
Ortho Rose & Flower Disease Control	17 5.0%	4 6.0%	4 7.0%	7 5.0%	2 3.0%	16 6.0%	0 -	0 -	1 9.0%	4 4.0%	6 4.0%	7 10.0%	1 2.0%	5 10.0%	4 5.0%	6 9.0%	1 1.0%

(Continued)

Table 6C-2: What brand(s) of Fungicides did you purchase? If possible, please refer to the container

	Region					Dwelling				Population density				Family income			
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Garden Safe 3-in-1 Fungicide	17	1	1	8	7	16	0	0	1	3	12	2	3	2	4	3	5
	5.0%	2.0%	2.0%	6.0%	10.0%	6.0%	-	-	9.0%	3.0%	8.0%	3.0%	7.0%	4.0%	5.0%	4.0%	7.0%
Green Cure Fungicide	15	1	4	7	3	12	2	0	1	4	6	5	1	3	5	3	3
	5.0%	2.0%	7.0%	5.0%	4.0%	4.0%	12.0%	-	9.0%	4.0%	4.0%	7.0%	2.0%	6.0%	6.0%	4.0%	4.0%
Ecosmart Rose & Flower Care	14	2	2	4	6	11	2	1	0	5	7	2	1	6	1	2	4
	4.0%	3.0%	3.0%	3.0%	9.0%	4.0%	12.0%	14.0%	-	5.0%	5.0%	3.0%	2.0%	12.0%	1.0%	3.0%	5.0%
Bonide Sulfur Plant Fungicide	14	2	1	3	8	13	0	1	0	6	6	2	2	1	5	1	5
	4.0%	3.0%	2.0%	2.0%	12.0%	5.0%	-	14.0%	-	6.0%	4.0%	3.0%	4.0%	2.0%	6.0%	1.0%	7.0%
Hi-Yield Captan Fungicide	13	0	2	6	5	10	1	1	1	6	5	2	3	3	4	1	2
	4.0%	-	3.0%	4.0%	7.0%	3.0%	6.0%	14.0%	9.0%	6.0%	3.0%	3.0%	7.0%	6.0%	5.0%	1.0%	3.0%
Ortho Disease-B-Gon	12	3	4	5	0	11	0	1	0	3	7	2	0	2	5	3	2
	4.0%	5.0%	7.0%	4.0%	-	4.0%	-	14.0%	-	3.0%	5.0%	3.0%	-	4.0%	6.0%	4.0%	3.0%
Garden Friendly Fungicide	12	2	2	5	3	10	1	1	0	9	2	1	2	1	2	6	1
	4.0%	3.0%	3.0%	4.0%	4.0%	3.0%	6.0%	14.0%	-	8.0%	1.0%	1.0%	4.0%	2.0%	2.0%	9.0%	1.0%
Green Light Rose Defense	12	3	1	6	2	11	1	0	0	6	6	0	0	0	3	3	6
	4.0%	5.0%	2.0%	4.0%	3.0%	4.0%	6.0%	-	-	6.0%	4.0%	-	-	-	4.0%	4.0%	8.0%
Safer Garden Fungicide	11	1	2	5	3	10	1	0	0	5	6	0	0	2	4	1	4
	3.0%	2.0%	3.0%	4.0%	4.0%	3.0%	6.0%	-	-	5.0%	4.0%	-	-	4.0%	5.0%	1.0%	5.0%
Spectracide Immunox Multi Purpose Fungicide Garden	10	2	5	3	0	8	2	0	0	3	6	1	1	2	5	0	2
	3.0%	3.0%	9.0%	2.0%	-	3.0%	12.0%	-	-	3.0%	4.0%	1.0%	2.0%	4.0%	6.0%	-	3.0%
Espoma Earth Tone Garden Fungicide	8	3	0	3	2	8	0	0	0	2	6	0	0	0	3	3	2
	2.0%	5.0%	-	2.0%	3.0%	3.0%	-	-	-	2.0%	4.0%	-	-	-	4.0%	4.0%	3.0%
Gulfstream Home & Garden Fungicide	7	1	1	0	5	5	1	1	0	3	4	0	0	1	3	0	3
	2.0%	2.0%	2.0%	-	7.0%	2.0%	6.0%	14.0%	-	3.0%	3.0%	-	-	2.0%	4.0%	-	4.0%
Organocide Plant Doctor Fungicide	6	3	1	1	1	4	2	0	0	4	2	0	0	2	3	0	1
	2.0%	5.0%	2.0%	1.0%	1.0%	1.0%	12.0%	-	-	4.0%	1.0%	-	-	4.0%	4.0%	-	1.0%
Fertilome Broad Spectrum Lawn & Garden Fungicide	5	3	0	1	1	4	1	0	0	1	3	1	0	0	3	2	0
	2.0%	5.0%	-	1.0%	1.0%	1.0%	6.0%	-	-	1.0%	2.0%	1.0%	-	-	4.0%	3.0%	-
Monterey Lawn Fungicide	5	1	0	2	2	5	0	0	0	1	3	1	0	0	2	2	1
	2.0%	2.0%	-	1.0%	3.0%	2.0%	-	-	-	1.0%	2.0%	1.0%	-	-	2.0%	3.0%	1.0%
Garden Tech Daconil	5	0	0	2	3	5	0	0	0	2	2	1	1	0	1	1	2
	2.0%	-	-	1.0%	4.0%	2.0%	-	-	-	2.0%	1.0%	1.0%	2.0%	-	1.0%	1.0%	3.0%

(Continued)

Table 6C-2: What Brand(s) of Fungicides did you Purchase? If Possible, Please Refer to the Container

	Region					Dwelling			Population density				Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Spectracide Immunox Lawn Disease Control	5	0	1	3	1	5	0	0	0	3	2	0	1	0	2	0	2
	2.0%	-	2.0%	2.0%	1.0%	2.0%	-	-	-	3.0%	1.0%	-	2.0%	-	2.0%	-	3.0%
Serenade Garden Disease Control	3	1	1	1	0	3	0	0	0	1	1	1	0	1	2	0	0
	1.0%	2.0%	2.0%	1.0%	-	1.0%	-	-	-	1.0%	1.0%	1.0%	-	2.0%	2.0%	-	-
Southern Ag Liquid Copper Fungicide	3	0	0	0	3	3	0	0	0	2	1	0	0	0	0	1	2
	1.0%	-	-	-	4.0%	1.0%	-	-	-	2.0%	1.0%	-	-	-	-	1.0%	3.0%
VPG Systemic Fungicide	3	0	1	0	2	2	1	0	0	2	1	0	0	1	0	0	2
	1.0%	-	2.0%	-	3.0%	1.0%	6.0%	-	-	2.0%	1.0%	-	-	2.0%	-	-	3.0%
Other	5	0	0	2	3	5	0	0	0	1	1	3	3	0	0	1	1
	2.0%	-	-	1.0%	4.0%	2.0%	-	-	-	1.0%	1.0%	4.0%	7.0%	-	-	1.0%	1.0%
Don't know	46	9	12	17	8	42	2	1	1	15	16	j	mN	7	15	9	10
	14.0%	15.0%	21.0%	13.0%	12.0%	15.0%	12.0%	14.0%	9.0%	14.0%	11.0%	22.0%	11.0%	13.0%	18.0%	13.0%	13.0%
Sigma	611	118	115	235	143	535	46	14	16	242	274	j	71	90	178	113	159
	189.0%	190.0%	198.0%	175.0%	207.0%	186.0%	271.0%	200.0%	145.0%	222.0%	189.0%	138.0%	158.0%	173.0%	214.0%	169.0%	209.0%

Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

PRODUCT FORM

Liquid concentrates continue to be the most commonly purchased form of fungicides, accounting for 29% of the responses in 2016. Ready-to-use trigger sprays, dusts, aerosol sprays, and granules follow closely with 26%, 22%, 21%, and 20%, respectively. Use of liquid concentrates follows similar trends across various regions, from a high in the South of 30% of the responses, to a low of 28% in both the Midwest and the West.

Table 6C-3: What Form was the Fungicide?																	
	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used Fungicides in the Past Year	323	62*	58*	134	69*	288	17**	7**	11**	109	145	69*	45*	52*	83*	67*	76*
Liquid concentrate	93	18	16	40	19	87	4	2	0	33	46	14	11	14	31	17	20
	29.0%	29.0%	28.0%	30.0%	28.0%	30.0%	24.0%	29.0%	-	30.0%	32.0%	20.0%	24.0%	27.0%	37.0%	25.0%	26.0%
Ready-to-use (RTU) with trigger spray	83	11	18	32	22	73	5	3	2	29	38	16	14	9	24	15	21
	26.0%	18.0%	31.0%	24.0%	32.0%	25.0%	29.0%	43.0%	18.0%	27.0%	26.0%	23.0%	31.0%	17.0%	29.0%	22.0%	28.0%
Dust	72	16	14	27	15	69	1	1	1	29	33	10	8	17	11	14	22
	22.0%	26.0%	24.0%	20.0%	22.0%	24.0%	6.0%	14.0%	9.0%	27.0%	23.0%	14.0%	18.0%	33.0%	13.0%	21.0%	29.0%
Aerosol Spray	68	12	14	28	14	61	4	0	3	30	29	9	8	9	17	16	18
	21.0%	19.0%	24.0%	21.0%	20.0%	21.0%	24.0%	-	27.0%	28.0%	20.0%	13.0%	18.0%	17.0%	20.0%	24.0%	24.0%
Granules	66	14	8	29	15	56	4	2	4	23	28	15	8	8	15	14	21
	20.0%	23.0%	14.0%	22.0%	22.0%	19.0%	24.0%	29.0%	36.0%	21.0%	19.0%	22.0%	18.0%	15.0%	18.0%	21.0%	28.0%
(Continued)																	

Table 6C-3: What Form was the Fungicide?																	
	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+-family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
RTU liquid with hose sprayer	39	9	5	19	6	33	6	0	0	13	21	5	5	4	8	12	10
	12.0%	15.0%	9.0%	14.0%	9.0%	11.0%	35.0%	-	-	12.0%	14.0%	7.0%	11.0%	8.0%	10.0%	18.0%	13.0%
Water soluble powder	22	3	6	10	3	18	3	0	1	10	9	3	5	3	2	4	8
	7.0%	5.0%	10.0%	7.0%	4.0%	6.0%	18.0%	-	9.0%	9.0%	6.0%	4.0%	11.0%	6.0%	2.0%	6.0%	11.0%
Other	1	0	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0
	0	-	-	-	1.0%	0	-	-	-	-	1.0%	-	2.0%	-	-	-	-
Don't know	15	5	3	5	2	13	1	0	1	3	6	6	1	2	8	3	1
	5.0%	8.0%	5.0%	4.0%	3.0%	5.0%	6.0%	-	9.0%	3.0%	4.0%	9.0%	2.0%	4.0%	10.0%	4.0%	1.0%
Sigma	459	88	84	190	97	411	28	8	12	170	211	78	61	66	116	95	121
	142.0%	142.0%	145.0%	142.0%	141.0%	143.0%	165.0%	114.0%	109.0%	156.0%	146.0%	113.0%	136.0%	127.0%	140.0%	142.0%	159.0%
Proportions/Mean: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing																	

RETAIL OUTLET

Home improvement centers are the leading retail outlet for fungicides, accounting for 32% of the purchase incidence in 2016. Discount or mass merchandise stores rank second with 20% of the responses, followed by lawn and garden centers with 14%. All regions prefer to buy their fungicides at home improvement centers rather than discount and mass merchandise stores.

PRODUCT USAGE

Fungicide products are purchased to treat a variety of problems. The leading problem treated is mold, with 39% of respondents indicating this reason. Mildew ranks second, with 33%, followed by moss, with 31% and leaf fungus, with 30%. Regionally, mold predominates in the South, with 46%, and is treated the least in the Northeast, with 27%.

Table 6C-8: Where Home and Garden Fungicides Are Used - Fungicides*																	
	Total	Region				Dwelling				Population density			Family income				
		Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Base: Have Used 'Fungicides' in Past Year	323	62*	58*	134	69*	288	17**	7**	11**	109	145	69*	45*	52*	83*	67*	76*
Home improvement center (e.g. Home Depot, Lowes)	102	18	18	47	19	96	3	0	3	33	46	23	11	13	27	30	21
	32.0%	29.0%	31.0%	35.0%	28.0%	33.0%	18.0%	-	27.0%	30.0%	32.0%	33.0%	24.0%	25.0%	33.0%	45.0%	28.0%
Discount/mass merchandise store (e.g. Wal-Mart, Kmart)	65	13	13	26	13	54	3	4	4	19	26	20	14	14	16	7	14
	20.0%	21.0%	22.0%	19.0%	19.0%	19.0%	18.0%	57.0%	36.0%	17.0%	18.0%	29.0%	31.0%	27.0%	19.0%	10.0%	18.0%
Lawn and garden center/nursery	45	11	10	16	8	41	2	1	1	15	22	8	9	6	12	4	14
	14.0%	18.0%	17.0%	12.0%	12.0%	14.0%	12.0%	14.0%	9.0%	14.0%	15.0%	12.0%	20.0%	12.0%	14.0%	6.0%	18.0%
Farm supply store	36	7	4	14	11	32	2	1	1	10	18	8	3	5	8	11	9
	11.0%	11.0%	7.0%	10.0%	16.0%	11.0%	12.0%	14.0%	9.0%	9.0%	12.0%	12.0%	7.0%	10.0%	10.0%	16.0%	12.0%
Hardware store (e.g. True Value)	18	3	3	7	5	16	2	0	0	14	3	1	1	2	4	7	4
	6.0%	5.0%	5.0%	5.0%	7.0%	6.0%	12.0%	-	-	13.0%	2.0%	1.0%	2.0%	4.0%	5.0%	10.0%	5.0%
Supermarket/grocery store	15	1	1	8	5	15	0	0	0	4	10	1	1	4	2	3	5
	5.0%	2.0%	2.0%	6.0%	7.0%	5.0%	-	-	-	4.0%	7.0%	1.0%	2.0%	8.0%	2.0%	4.0%	7.0%
Mail order/catalog	13	4	0	9	0	13	0	0	0	4	9	0	1	2	6	0	4
	4.0%	6.0%	-	7.0%	-	5.0%	-	-	-	4.0%	6.0%	-	2.0%	4.0%	7.0%	-	5.0%
Warehouse/wholesale club	4	0	2	0	2	2	1	1	0	2	2	0	1	1	1	0	1
	1.0%	-	3.0%	-	3.0%	1.0%	6.0%	14.0%	-	2.0%	1.0%	-	2.0%	2.0%	1.0%	-	1.0%
Other	5	0	3	1	1	4	1	0	0	2	2	1	1	0	1	1	2
	2.0%	-	5.0%	1.0%	1.0%	1.0%	6.0%	-	-	2.0%	1.0%	1.0%	2.0%	-	1.0%	1.0%	3.0%
Don't know	20	5	4	6	5	15	3	0	2	6	7	7	3	5	6	4	2
	6.0%	8.0%	7.0%	4.0%	7.0%	5.0%	18.0%	-	18.0%	6.0%	5.0%	10.0%	7.0%	10.0%	7.0%	6.0%	3.0%
Sigma	323	62	58	134	69	288	17	7	11	109	145	69	45	52	83	67	76
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Proportions/Means: Columns Tested (5%, 10% risk level) - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

Table 6C-9: What Problem were you trying to eliminate?

	Region					Dwelling				Population density			Family income				
	Total	Northeast	Midwest	South	West	One-family house	Two-family house	Three+ family house	Mobile home/trailer	Urban	Suburban	Rural	Under \$25k	\$25k - <\$50k	\$50k - <\$75k	\$75k - <\$100k	\$100k +
Base: Have Used Fungicides in the Past Year	323	62*	58*	134	69*	288	17**	7**	11**	109	145	69*	45*	52*	83*	67*	76*
Molds	126	17	24	61	24	116	4	2	4	39	63	24	18	16	30	27	35
	39.0%	27.0%	41.0%	46.0%	35.0%	40.0%	24.0%	29.0%	36.0%	36.0%	43.0%	35.0%	40.0%	31.0%	36.0%	40.0%	46.0%
Mildew	107	13	15	49	30	98	5	2	2	35	51	21	12	16	30	26	23
	33.0%	21.0%	26.0%	37.0%	43.0%	34.0%	29.0%	29.0%	18.0%	32.0%	35.0%	30.0%	27.0%	31.0%	36.0%	39.0%	30.0%
Moss	100	21	19	34	26	86	9	1	4	36	44	20	11	15	22	27	25
	31.0%	34.0%	33.0%	25.0%	38.0%	30.0%	53.0%	14.0%	36.0%	33.0%	30.0%	29.0%	24.0%	29.0%	27.0%	40.0%	33.0%
Leaf fungus	98	18	18	38	24	89	5	1	3	34	43	21	14	15	24	23	22
	30.0%	29.0%	31.0%	28.0%	35.0%	31.0%	29.0%	14.0%	27.0%	31.0%	30.0%	30.0%	31.0%	29.0%	29.0%	34.0%	29.0%
Rust	60	10	7	29	14	58	2	0	0	23	30	7	9	5	15	13	18
	19.0%	16.0%	12.0%	22.0%	20.0%	20.0%	12.0%	-	-	21.0%	21.0%	10.0%	20.0%	10.0%	18.0%	19.0%	24.0%
Used as a preventative	53	8	11	24	10	46	1	3	3	15	23	15	9	10	10	7	17
	16.0%	13.0%	19.0%	18.0%	14.0%	16.0%	6.0%	43.0%	27.0%	14.0%	16.0%	22.0%	20.0%	19.0%	12.0%	10.0%	22.0%
Blight	52	11	12	17	12	47	2	2	1	19	24	9	5	9	18	7	13
	16.0%	18.0%	21.0%	13.0%	17.0%	16.0%	12.0%	29.0%	9.0%	17.0%	17.0%	13.0%	11.0%	17.0%	22.0%	10.0%	17.0%
Toadstools	34	3	8	16	7	29	2	2	1	13	17	4	6	3	10	8	7
	11.0%	5.0%	14.0%	12.0%	10.0%	10.0%	12.0%	29.0%	9.0%	12.0%	12.0%	6.0%	13.0%	6.0%	12.0%	12.0%	9.0%
Scale	33	8	6	13	6	30	3	0	0	13	17	3	0	5	8	11	9
	10.0%	13.0%	10.0%	10.0%	9.0%	10.0%	18.0%	-	-	12.0%	12.0%	4.0%	-	10.0%	10.0%	16.0%	12.0%
Other	3	0	0	2	1	2	0	0	1	0	1	2	1	0	1	0	1
	1.0%	-	-	1.0%	1.0%	1.0%	-	-	9.0%	-	1.0%	3.0%	2.0%	-	1.0%	-	1.0%
Don't know	15	5	4	4	2	13	2	0	0	3	7	5	2	1	8	1	3
	5.0%	8.0%	7.0%	3.0%	3.0%	5.0%	12.0%	-	-	3.0%	5.0%	7.0%	4.0%	2.0%	10.0%	1.0%	4.0%
Sigma	681	114	124	287	156	614	35	13	19	230	320	131	87	95	176	150	173
	211.0%	184.0%	214.0%	214.0%	226.0%	213.0%	206.0%	186.0%	173.0%	211.0%	221.0%	190.0%	193.0%	183.0%	212.0%	224.0%	228.0%

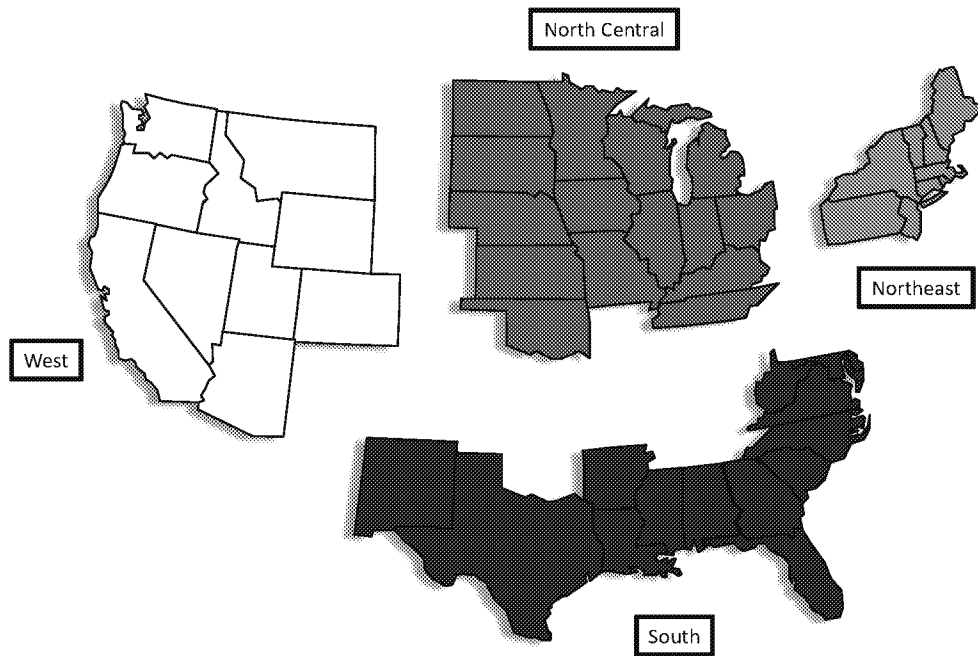
Proportions/Mean: Columns Tested [5%, 10% risk level] - A/B/C/D - E/F/G/H - I/J/K - L/M/N/O/P Overlap formulae used. * small base; ** very small base (under 30) ineligible for sig testing

APPENDICES

Table A-1: U.S. Sales of Branded Consumer Pesticides and Fertilizers by Marketer, 2016

Company	\$ Thousand
The Scotts Miracle-Gro Company	1,529,787
Merial Ltd.	550,000
Spectrum Brands	464,075
S.C. Johnson and Son Inc.	425,000
Bayer AG	238,500
Central Garden & Pet Company	225,000
Hartz Mountain Corporation	220,000
Perrigo	122,500
Reckitt Benckiser plc	120,000
Woodstream Corporation	112,500
Virbac	98,700
Zoetis	98,500
Lebanon Seaboard Corporation	90,202
SBM	72,175
Avon Products, Inc.	68,000
Voluntary Purchasing Groups	50,868
The Andersons Inc.	43,200
Lamplight Farms	40,800
PBI/Gordon Corporation	36,000
Bonide Products Inc.	28,700
Merck Animal Health	28,000
The Jobe's Company	27,500
Elanco	22,000
The Espoma Company	19,900
Control Solutions Inc.	14,815
Summit Chemical Company	13,500
Bengal Products Inc.	13,400
Good Earth Horticulture	13,300
Monterey Lawn and Garden Products, Inc.	11,400
Zep Inc.	10,500
Southern Agricultural Insecticides	10,100
Bacon Products	9,000
Dial Corporation	8,500
Pic Corporation	7,405
J.T. Eaton & Company Inc.	4,940
St. Gabriel Organics	4,000
All other	180,400
Total	5,033,167
Includes U.S. sales of branded products and contract sales for major store brands (Kmart, Wal-Mart, Ace Hardware, and Home Depot). Non-U.S. sales are not included; other sales of products manufactured under contract for a private-label marketer have been deducted from the producer's sales to avoid double-counting; and other related products, such as garden implements, birdseed, and bagged soils, have been subtracted.	

Figure A-1: Geographic Regions for Consumer Profiles



Consumer Sales by Company and Product Type, 2016															
Company	Fertilizers			Herbicides					Insecticides					Total	Grand total
	Lawn	Garden	Houseplant	Total	Fungicides	Lawn	Garden	NS	Total	Rodenticides	Household	Pet	Outdoor	Repellents	
Avon									-					68,000	68,000
Bacon Products									-	700	5,800	500		2,000	9,000
Bayer									-			238,500			238,500
Bengal Products									-		4,020	4,020	5,360		13,400
Bonide Products		2,000		2,000	3,000	2,500	500	5000	8,000	2,500	1,500		10,200	1,500	28,700
Central Garden & Pet	30,350	3,250	250	33,850	600	12,250	4,250	9,200	25,700	7,750	21,600	61,500	69,550	4,450	157,100
Control Solutions								3,700	3,700		2,380	3,065	5,670		11,115
Dial Corp.									-		8,500				8,500
Elanco									-			22,000			22,000
Good Earth Horticulture	1,600	10,900	800	13,300					-						13,300
Hartz Mountain									-			220,000			220,000
J.T. Eaton & Company									-	3,325	950			665	4,940
Lamplight Farms									-					40,800	40,800
Lebanon Seaboard Corp.	18,942	27,060		46,002		10,560	31,430	2,210	44,200						90,202
Merck Animal Health									-			28,000			28,000
Merial									-			550,000			550,000
Monterey Lawn & Garden	3,600			3,600	2,400	3,000			3,000				2,400		11,400
PBI/Gordon						20,600	3,700	3,800	28,100				7,900		36,000
Perrigo									-			122,500			122,500
Pic Corp.									-		2,740		1,715	2,950	7,405
Reckitt Benckiser									-	120,000					120,000
S.C. Johnson									-		180,000		25,000	220,000	425,000
SBM Development					3,125	9,500	1,500	5,250	16,250		12,300		40,500		72,175
Southern Agricultural	2,300			2,300	2,200	1,400	1,100		2,500				3,100		10,100
Spectrum Brands	9,150	4,575	4,575	18,300	9,150	22,875	9,150	36,600	68,625		150,000	5,550	169,275	43,175	464,075
St. Gabriel Organics							200	400	600				2,600	800	4,000
Summit Chemical									-				13,500		13,500
The Andersons	31,500	4,200		35,700		3,000	1,500		4,500				3,000		43,200
The Espoma Company	7,960	9,940		17,900					-				2,000		19,900
The Jobe's Company		25,000	2,500	27,500					-						27,500
The Scotts Company	672,150	225,493	55,253	952,896	24,646	73,177	8,986	168,478	250,641	32,379	62,734	-	206,291	-	1,529,787
Viroac									-			98,700			98,700
Voluntary Purchasing Group	28,318	4,720		33,038		5,244		4,720	9,964				7,866		50,868
Woodstream	18,000	7,000		25,000	5,000				-	20,000	27,500		22,500	12,500	112,500
Zep, Inc.								525	525		4,725	525	4,725		10,500
Zoetis									-			98,500			98,500
Other-c	50,000	10,000	4,000	64,000	15,400	4,000	3,000	12,000	19,000	8,000	20,000	20,000	20,000	14,000	180,400
Total	873,870	334,138	67,378	1,275,386	65,521	168,106	65,316	251,883	485,305	194,854	504,749	1,473,360	623,152	410,840	5,033,167

COMMENT SHEET FOR CONSUMER MARKETS FOR PESTICIDES AND FERTILIZERS

What is your overall impression of this study?

Are there any other types of information that you feel should be included in future issues of this study?

Do you have any suggestions concerning the format of this study?

Any additional comments:

THANK YOU FOR YOUR COMMENTS AND SUGGESTIONS

PLEASE RETURN THIS FORM TO:

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